

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[PRICE 6D.]

ASSAYING AND ANALYSIS.—Mr. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTURES, that he still continues to CONDUCT ASSAYS and ANALYSES of all METALS, ORES, and MINERAL SUBSTANCES, and of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY, 25, HANLEY ROAD, KENTON TOWN, LONDON. 37
which address communications are to be forwarded. Instructions in all matters

PROTECTION TO TRADESMEN FROM FRAUD.

In a great commercial country like England, where probably nine-tenths of the community are directly or indirectly employed in trade and commerce, it is but a natural result, that a class should arise whose exertions are devoted, not to honest industry and enterprise, but to obtain an existence by the credulity of the more energetic and wealthy, and whose closer attention to the details and progress of their own business than to the deep-laid schemes of the swindler, often tends to make them victims.

As long since as 1776, a society was established under the title of "The Society of Guardians for the Protection of Trade," to caution and protect the trading community, and others who became members, against the numerous frauds, deceptions, and impositions to which they are daily exposed. This society has progressed most favourably, and with great advantage to the commercial community, up to the present time, and is now remodelled, under the title of "The City of London Trade Protection Society." Its definite objects are, to make all necessary inquiries for traders, warehousemen, and others, previously to their giving credit; to contribute from its funds the means of prosecuting in cases of robbery, forgery, &c.; opposing in fraudulent bankruptcy and insolvency cases; and to afford advice generally to members, against whose interests as traders, or otherwise, any such malpractices may have been committed, or attempted.

The advantages of such a society are not confined to any class; not only traders, but noblemen, gentlemen, and clergymen, are daily victimised by parties well known to the society's officers, and such frauds could hardly take place if parties would avail themselves of its services. The more its ramifications are extended, the more good will it effect; and every new member becomes an additional and valuable agent for the safety of the property of others, as well as his own, and the general security of trade. The subscription is one guinea per annum, and a private circular is issued periodically to the members, containing a list of persons whose transactions have come under the society's notice between the publications. A weekly circular is also published, at 5s. 3d. per quarter to members, and 6s. 6d. to non-subscribers, or 6d. a single number—being a complete commercial gazette, containing lists of assignees, dividends, bankrupts, insolvents, certificates, remands, suspensions, failures, assignments in trust, outlawries, partnerships, heirs at law, sittings of the various courts, law reports, digests of important cases, new statutes, and, in fact, every subject which affects or can interest the merchant or man of business.

Such an institution, supported as it is by the mercantile wealth of London, and other large cities and towns, and in connection with branch societies in all parts of England, must be of incalculable advantage; and while it is in a capacity to protect its members from every species of fraud, and punish with the utmost rigour where it has been committed, without cost to the individual, it disseminates a variety of information, obtained through its own peculiar channels, which is not to be got at by other means.

LITHOGRAPH C STONE.—Among the prizes offered by the Paris Society for the Encouragement of Arts and Manufacturers is one of 1500 fr. (60*l.*) for the discovery and practical working of new varieties of lithographic stones in France—the society being convinced that there exist in many localities of the country places where lithographic stones may be quarried to advantage.

NERVOUSNESS, LOWNESS OF SPIRITS, DISORDERED STOMACH, AND INDIGESTION CURED BY HOLLOWAY'S PILLS.—The causes from which these complaints arise are too numerous for recital, yet nothing lays the foundation sooner than a studious or sedentary life, which disorders the nerves, and other distressing complaints follow, such as deranged stomachs, indigestion, and lowness of spirits. There is no medicine so certain as Holloway's Pills in allaying the irritability of the nervous system, strengthening the tone of the stomach, creating appetite, improving digestion, and invigorating the constitution; their purifying nature gives freedom of excretion to the blood, so that by their use the afflicted are speedily restored to health.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

ON NERVOUS DEBILITY AND GENERATIVE DISEASES.—Just published, the thirty-fifth thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, by the Authors, to any address, secure from observation, for 2s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, &c.

MANHOOD: THE CAUSES OF ITS PREMATURE DECLINE.—With plain directions for its perfect restoration. A Medical Essay on the diseases of the Generative Organs, emanating from solitary and sedentary habits, indolence, excesses, the effects of climate, and infection, &c., addressed to the sufferer in youth, manhood, and old age; with practical remarks on marriage, the treatment and cure of nervous and mental debility, impotency, syphilis, and other venereal diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease, and directions for private correspondence, cases, &c.—By J. L. CURTIS & CO., consulting surgeons, 7, Firth-street, Soho-sq., London.

REVIEW OF THE WORK.—We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman.—*Sun, Evening Paper.*

Curtis, On Manhood. (Strange).—Having for many years been the standard work on these diseases, its originality is apparent, and its perusal breathes consolation and hope to the mind of the patient.—*Review of the Month.*

Manhood: a medical work.—To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions—while to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.—*Chronicle.*

Manhood: by J. L. Curtis and Co.—Their long experience and reputation in the treatment of these painful diseases is the patient's guarantee, and well deserves for the work its immense circulation.—*Ira.*

Published by the authors, may be had at their residence; sold also by Strange, 21, Paternoster-row, London; Heywood, Oldham-street, Manchester; Phillips, South Castle-street, Liverpool; Robinson, 11, Greenisle-street, Edinburgh; Berry and Co., Capel-street, Dublin; and, in a sealed envelope, by all booksellers.

Illustrated by 36 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Incapacity, and Impediments to Marriage. New Edition, enlarged to 196 pages, not post-paid, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. In postage stamps.

THE SILENT FRIEND: a medical work, on the infirmities and decay of the generative system, from excessive indulgence, infection, and the immoderate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 26 coloured engravings. By R. & L. PERRY & CO., 19, Berners-street, Oxford-street, London. Published by the authors; sold by Strange, 21, Paternoster-row; Hannay, 63, and Sanger, 150, Oxford-street; Starie, 23, Titchborne-street, Haymarket; and Gordon 146, Leadenhall-street.

PART THE FIRST treats of the anatomy and physiology of the reproductive organs, and is illustrated by six coloured engravings.—**PART THE SECOND** treats of the consequences resulting from excessive indulgence, and their lamentable effects on the system, producing mental and bodily weakness, nervous excitement, and generative incapacity; it is illustrated by three explanatory engravings.—**PART THE THIRD** treats of the diseases resulting from infection, either in the primary or secondary form, and contains explicit directions for their treatment. The consequences of neglect, and of the abuse of mercury are also clearly pointed out. This section is illustrated by 17 coloured engravings.—**PART THE FOURTH** treats of the prevention of disease by a simple application, by which the danger of infection is obviated. The action is simple, but sure. It acts with the virus chemically, and destroys its power on the system. This important part of the work should be read by every young man entering into life.—**PART THE FIFTH** is devoted to the consideration of marriage and its duties. The causes of unproductive unions are also considered, and the whole subject of philopically inquired into.

THE CORDIAL BALM OF SYRIACUM is exclusively employed in treating nervous and sexual debility, impotency, &c., 11s. and 33s. per bottle.—**THE CONCENTRATED DETENSIVE ESSENCE**, an anti-syphilitic remedy, for purifying the blood in cases of infection, secondary symptoms, eruptions, the abuse of mercury, 11s. and 33s. per bottle.—**PERRY'S PURIFYING SPECIFIC PILLS**, 2s. 9d., 6s. 6d., and 11s. per box—a certain remedy in gonorrhoea, gleet, strictures, and chronic inflammation of the bladder.—Consultation fee, if by letter, 2*l.* 5*s.* packets, with advice, to be had at the establishment only, by which the fee, 2*l.* 5*s.* is saved.—Attendance daily at 19, Berners-street, from 11 to 2, and 5 to 8; on Sundays, from 11 to 1.

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DR. LA'MERT ON THE SECRET INFIRMITIES OF YOUTH AND MATURITY. With 40 coloured engravings on steel.

Just published, and may be had in French or English, in a sealed envelope, 2s. 6d.; or post-free, from the author, for forty-two stamps.

SELF-PRESERVATION: A Medical Treatise, on the Physiology of Marriage, and on the Secret Infirmities and Disorders of Youth and Maturity, usually acquired at an early period of life, which enervate the physical and mental powers, diminish and enfeeble the natural feelings, and exhaust the vital energies of Manhood; with Practical Observations on the Treatment of Nervous Debility, whether arising from these causes, close study, or the influence of tropical climates; local and constitutional weakness, syphilis, stricture, and all diseases and derangements resulting from indiscretion; with 40 coloured engravings, illustrating the Anatomy, Physiology, and Diseases of the Reproductive Organs, explaining their various structures, uses, and functions, and the injuries that are produced in them by solitary habits, excesses, and infection.

BY SAMUEL LA'MERT, M.D., 27, BEDFORD-SQUARE, LONDON.

"The author of this singular and talented work is a legally qualified medical man, who has evidently had considerable experience in the treatment of the various disorders, arising from the follies and frailties of early indiscretion. The engravings are an invaluable addition, by demonstrating the consequences of excesses, which must act as a salutary warning to youth and maturity, and by its personal, many questions may be satisfactorily replied to, that admit of no appeal, even to the most confidential friend."—*Ira.*

"Unquestionably this is a most extraordinary and skilful work, and ought to be extensively circulated; for it is quite evident that there are peculiar habits acquired at public schools and private seminaries, which are totally unknown and concealed from the conductors of those establishments, and which cannot be too strongly reprobated and condemned. The engravings that accompany the work are clear and explanatory; and being written by a duly-qualified medical practitioner, will, doubtless, be the means of saving many a youth, as well as those of mature age, from the various evil consequences resulting from early indiscretions."—*Ira.*

Sold by Kent and Richards, 52, Paternoster-row; Hannay, 63, Oxford-street; Starie, Titchborne-street, Haymarket; Manell, 115, Fleet-street; Gordon, 146, Leadenhall-street; or by post, for 42 stamps, from the author's residence, who may be consulted personally (or by letter) on these disorders daily, from 10 till 9, and from 5 till 9.

SOUTH AUSTRALIAN "LABOUR MARKET."

The *Adelaide Observer*, of 25th Dec. last, in giving an account of the state of supply, demand, and remuneration, of the several descriptions of artisans and labourers, for the information of intending emigrants, makes the following remarks in reference to those classes in which our readers are more immediately interested:—

Miners.—The influx of this class of workmen has been very considerable, and all of them are not employed in mining operations, but they find it easy to obtain ordinary labour at 25*s.* 3*s.* per week; and some employed in well-sinking, and even in quarrying, have been earning more. At the northern mines some clever and steady miners are doing handsomely, and very few have any reason to complain—although a realisation of anticipated success in some of the mines nearer Adelaide is necessary to produce an engrossing claim for the services of all the miners in the province in their legitimate calling. Miners working on owners' account are variously paid, according to circumstances and presumed ability, from 25*s.* to 35*s.* per week.

Blacksmiths.—are in demand at 35*s.* per week.
Bricklayers.—A few occasionally out of work, 7*s.* to 6*s.* per day.
Carpenters.—Good hands in demand, 7*s.* per day.
Labourers.—(in town) in demand, 4*s.* to 4*s.* 6*d.* per day—agricultural ditto, in demand, at 10*s.* to 12*s.* a-week, with rations; superior hands get more, and meet with good encouragement.

Masons.—in demand, at 7*s.* to 7*s.* 6*d.* per day.
Sawyers.—are in good demand, and can usually earn 40*s.* per week.
Timmen.—Trade brisk, journeymen's wages 30*s.* to 35*s.* per week.
The generality of mechanics in the building line are fully employed, and those in some branches of it are in great demand.

IMPROVED RAZOR.—Mr. Davis, cutler, of Leadenhall-street, has recently registered under the Utility Designs Act, a razor of highly-improved configuration, which consists in giving a curvilinear form, lengthwise, to the edge of the blade, and leaving more room for obtaining a good purchase on it when shaving. The handle also is bevelled within, to allow more space for the entry of the blade when shutting to—thus preventing the injury to its edge, that frequently occurs from catching on the sides of the handle. These improvements, combined with the improved principle adopted in grinding the blade, produce an instrument having every advantage over those hitherto made.

TIPPING CART.—Mr. J. Easton, of Northamptonshire, has recently registered an improvement upon Crosskill's apparatus for tipping carts, used by excavators, agriculturists, and others. It consists in having an iron fixed on the cross timber of the shafts, standing up between the studs in front of the cart, there being attached to the framing supporting the cart in front thereof a spring bolt, that takes into holes formed in the tipping iron, by which means the cart is maintained in a steadfast position; and by releasing which, by pulling its handle, placed on one side of the vehicle, the same can be tipped without difficulty, and, in consequence of the various positions of the holes in the tipping iron, adjusted to different degrees of inclination. A new tail-board is likewise shown, applied to this cart. The advantages obtained by these arrangements are, the ease with which the cart can tip the cart, and the avoidance of the danger of the horse kicking against the tipping iron, which the present iron is liable to, from being pendant from the cross timber of the shaft.

NEW VOLTAIC BATTERY.—At one of the recent sittings of the Leeds Polytechnic Society, M. Stöhrer exhibited an improved voltaic battery in working condition. In the construction of this battery, M. Stöhrer employs zinc and charcoal, the charcoal cylinders are of such a degree of hardness that steel will scarcely mark them, and a saw is blunted without being able to cut a small cylinder. Their durability is almost equal to that of the carbonaceous substance formed in the interior of coal-gas retorts, which, according to M. Bunsen, may be so advantageously applied to form the charcoal points for voltaic light. The cylinders which M. Stöhrer makes use of are composed of coal and coke in powder, well mixed together, to which is added a sufficient quantity of coal-tar, to render the mass of a consistency suitable to be moulded. When dry, the cylinders are placed in a muffle, and submitted to a white heat; every variety of shape may thus be obtained, and this substance would appear especially of service for sharp or pointed surfaces, as well on account of its durability as for the perfect homogeneity of its grain. The zinc element in M. Stöhrer's battery is amalgamated, to prevent the rapid consumption of metal which would otherwise take place. With a battery of 24 in. in height, and cylinders of about 5 in. in diameter, an iron wire, of the thickness of an ordinary sewing-needle, may be melted, as also a watch-spring; it will communicate a magnetic power capable of sustaining 220 lbs. M. Stöhrer makes use of electro-magnets thus formed, to form the steel magnets of the electro-magnetic machines of his construction.

TELEGRAPH PROFITS.—The profits of the New York and Washington Telegraph Company are reported to amount to \$1000 per month. The Western Telegraph Company is, however, said to be doing a better business than that.

THE ELECTRIC TELEGRAPH COMPANY.—Having observed, from time to time, in your Journal, the various additions connected with our telegraph, it may not be uninteresting to record the recent improvement I have made in this branch—reducing the expenditure of battery power to one-tenth of the amount required before; so that now, instead of working on the long circuit (a distance of about 250 miles), with an equivalent of 240 pairs of plates, 24 pairs do duty, with a much more effective result—the reduced intensity not suffering so much by the effect of bad insulation. The most important point, however, is the economy of power when it is applied to the numerous stations throughout the kingdom, and the increased facility of working through a much larger amount of circuit resistance. The addition consists in the substitution of a single small steel lense, three quarters of an inch long, for the two 5-inch astatic magnetic needles, and placed between two small coils, of peculiar shape. This form has the advantage, besides those already mentioned, of giving a signal free from that constant vibration of the needle, against which so much has been said—the pendulous action of gravity being very limited, from its better adapted form.—*NATH. J. HOLMES: Athenaeum, May 30.*

THE MATERIALITY OF ELECTRICITY.—Mr. Dix having requested, through the medium of your Journal of the 20th inst., that I would communicate further relative to an experiment of mine that was noticed on the 18th of March last [see *Mining Journal* of the 25th], I beg the favour of a brief space in your columns for that purpose. The writer of the extract referred to in your correspondent's letter, seems to have been particularly struck by the fluid flowing first from the fracture near the bottom of the jar, and again ceasing to flow, first at the latter and then at the former; and, appearing to have been satisfied in his own mind by this, he does not notice the point upon which I most depend as a proof of materiality. Hence Mr. Dix seems to have been led to apply his ingenious test, the unsatisfactory result of which naturally arises from the extreme difficulty of removing the moveable coating from the interior of the jar, without deranging the position of the fluid upon the glass, which might even be altered by induction during the withdrawal of the pieces without contact, so extremely sensible is it to extraneous influences. On account of the readiness with which pyrogen is disturbed, I have avoided drawing any inference from its effects in the interior of the jar, and rest the proof of gravitation solely upon the curved form of the luminous streams, resembling the descent of water from a spout, which I find to be distinct from the ordinary discharge of the jar; for when this discharges itself, as frequently happens over the lip during the progress of the experiment, the fluid passes to the outer coating by as straight a line as the shoulder of the jar will allow. With respect, however, to the lapse of time between the appearance of pyrogen at the lip and fracture, Mr. Dix's suggestions, relative to the distance between the coatings being less at the crack than over the lip, does not seem to me to apply; for the cause of the luminous streams is not the attraction existing between the outer coating and the fluid in the interior of the jar, as appears by the stream over the lip not flowing direct to the coating, but having the appearance of being projected, which it maintains until it arrives on a level with the upper edge of the coating, when it altogether disappears. But, the stream from the crack does not disappear when it arrives on a level with the edge of the coating, but descends to the sheet of glass upon which the jar rests. The reason I have assigned for this difference is, that the former stream is overpowered by the large surface of metal presented to it in its descent, but that the property of gravitation prevails with the latter in consequence of the small surface of metal between the crack and the bottom of the jar not being sufficient to prevent its downward progress. It may not be unworthy of remark, that when the jar discharges itself the discharge always takes place over the lip, and never by the crack, which latter is the shortest distance. If the fluid be immaterial, why does not the discharge take place at the latter? It would appear that the fracture is sufficiently small to prevent the passage of the whole mass of pyrogen at once, which affords strong evidence of the existence of matter that can be held back whilst a portion is issuing in a visible stream; but, as already observed, I depend upon the parabolic form of the descending streams to decide the point of materiality. In reference to the name pyrogen, which is objected to by the *Medical Gazette*, quoted in the *Athenaeum* of the 18th March last, I would observe, that it was first adopted in the *Polytechnic Review* of January, 1845, at which period no one had used it, and I conceive that any subsequent application of it for another substance should give place to mine. Should the above not prove satisfactory to Mr. Dix, or any other of your numerous readers, and they feel sufficiently interested to inquire further into the experiment and the applications made of it, they will find them in the *Lancet* for the 12th January, 11th March, and 22d April last.—*J. J. LAKE: Royal Laboratory, Portsmouth, May 24.—Athenaeum.*

The Magnetic Telegraph.

Along the smooth and slender wires
The sleepless heralds run—
Fast as the clear and ringing rays
Go streaming from the sun:
No peals or flashes heard or seen,
Their wordless flight betray,
And yet their words are plainly felt
In cities far away.

No summer's heat nor winter's hail,
Can check their rapid course;
They move unmoved the fierce wind's rage—
The rough wave's sweeping force:
In the long night of rain and wrath,
As in the close of day,
They rush, with news of weal or woe,
To thousands far away.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Royal Botanic—Inner Circle, Regent-park	31 P.M.
MONDAY	Geographical—3, Waterloo-place	8 1/2 P.M.
	British Architects—16, Grosvenor-street	8 P.M.
TUESDAY	Medical and Chirurgical—63, Berners-street	8 1/2 P.M.
	Zoological—11, Tottenham-square	9 P.M.
	Syro-Egyptian—71, Mortimer-street, Cavendish-square	9 P.M.
WEDNESDAY	Society of Arts—Adelphi	8 P.M.
	Geological—Somerset-house	8 1/2 P.M.
	Literary Fund—73, Great Russell-street	3 P.M.
THURSDAY	Royal Asiatic—14, Grafton-street	2 P.M.

ROYAL COLLEGE OF CHEMISTRY.

The annual meeting of members was held at the college, Hanover-square, on Monday.—B. B. CABELL, Esq., M.P., presided.—The SECRETARY read the report of the council, which expressed their satisfaction at the increasing number of students: in the first year of the society's establishment, the amount received in fees from that source was 529*l.* 14*s.*; the second, 631*l.* 10*s.*; and in the present year, 737*l.* 10*s.* They referred with satisfaction to the report of the professor for some interesting details respecting the progress of the students. With regard to the financial condition of the institution, they regretted to state that the subscriptions towards it had materially fallen off. It had been found necessary to incur a heavy debt for the building of the laboratories, &c. A fund was opened to defray it, which promised well in the beginning, but which eventually left the institution with liabilities to the extent of 2000*l.* In order, as far as possible, to meet these liabilities, the council proposed a *pro rata* subscription among their body. The result was, that several members of the council and other noblemen and gentlemen, amounting in all to 23, contributed 50*l.* towards the object, and six others promised to come forward with a similar sum. By this means they were enabled to pay off the debt upon the building account, amounting to 1200*l.*, which covered every remaining liability connected with the building, with the exception of 100*l.* due to the architect. During the present session 52 students had entered. In the laboratory all classes of society were represented; and working at the same table might often be found a peer of the realm, a medical student, a member of parliament, and a druggist's apprentice. He rejoiced to say that, so well did the students uniformly conduct themselves, in no single instance had he been compelled to complain of impropriety of conduct. They had arrived at many and various results; and if their researches were sometimes more theoretical than immediately useful, still he could not but consider that they were laying in a store of knowledge which would be of great eventual advantage. The financial report showed the following results:—Balance remaining from last account, 622*l.* 18*s.*; receipts, 3502*l.* 9*s.* 7*d.*; expenditure, 1958*l.* 17*s.* 3*d.*; balance in hand, 5432*l.* 12*s.*—Mr. SQUIRE moved the adoption of the report, on which some conversation arose.—A question was asked with reference to the amount subscribed by the council towards the liquidation of the liabilities, whether that amount was intended as a loan or a gift?—It was explained that the question was an open one; that some gentlemen had made a gift to the institution of the amount they subscribed, while all had had the option of considering their subscriptions as loans if they so desired. It was agreed, that words to the above effect should be inserted in the report.—Mr. GLENN (of Butterleigh) concurred in that opinion, and spoke of the difficulty which manufacturers in the country experienced in obtaining analyses of minerals, and other materials necessary to their various occupations.—The report was then seconded by Mr. SANDWICH, and adopted unanimously.—Mr. GLENN then moved, and Dr. HALL seconded, a vote of thanks to Prince Albert, for his patronage of the institution, which was carried.—A vote of thanks to the various officers of the institution, and to those gentlemen who had subscribed towards the liquidation of the building debt, were then passed. A similar acknowledgment to the chairman concluded the proceedings.

GEOLOGICAL SOCIETY.

MAY 31.—C. LYELL, Esq. (V.P.), in the chair.

A paper, "On the Colouring Matter of Red Sandstones, and of Greyish and White Beds associated with them," by J. W. DAWSON, Esq., was read. The author's remarks apply chiefly to Nova Scotia, where red beds of any great extent first appear in the lower part of the carboniferous system. With them are many beds of a red colour, partly grey, or dark sandstones and shales, partly limestone and gypsum. The colouring matter of the red beds is the peroxide of iron, which the author thinks has been derived from the decomposition of the sulphuret of iron in the older Silurian rocks, whose destruction furnished the other materials of the deposit. The absence of colour in the grey beds he ascribes to the influence of decomposing vegetable matter, they being always accompanied by thin seams of coal, or contain remains of fossil plants. In the harbour of Freetown, a similar change is now seen to take place—the red mud carried into it by the rivers being changed to grey by the iron entering into combination with sulphur, probably obtained from the sulphates in the sea water, under the deoxidizing influence of decomposing vegetable matter.

"Remarks on the Structure of the Calamite," by J. S. DAWSON, Esq., was then read. Though one of the most abundant fossils of the coal formation, the true nature of this plant has hitherto been unknown. M. Brongniart considered them as allied to the Equisetaceae, an opinion very generally adopted, though opposed by Lindley and Hutton in the *Fossil Flora*. Mr. Dawson has procured some very perfect specimens, in thin slices of which the structure of the wood is still apparent. This most nearly resembles that of the Coniferae, and shows that the plants had a distinct wood and bark. From the specimens obtained, the author concludes that the calamite possessed most clearly a structure only to be met with in a dicotyledon; but, with certain characters constituting it a link connecting the three great classes of the vegetable kingdom.

"Notice on the Discovery of a Dragon Fly, and a New Species of Lepidoptera, in the Upper Lias, near Cheltenham, with a few Remarks on that Formation in Gloucestershire," by the Rev. F. B. BRODIE, was read. The remains of insects found in the Lias have hitherto been confined chiefly to single wings and elytra; and the present is the first nearly perfect insect of this order found in this country. Mr. Westwood considers that it comes nearest to the genus *Diplax*; but the head is unfortunately so shattered, that its precise character cannot be determined. The fish from the same locality has been described by Sir P. Egerton, who names it *Lepidoptera concentrica*.

BRITISH INVENTORS' PROTECTING COMPANY.

The members of this company held their second quarterly meeting at their office, 184, Fleet-street, on Thursday, the 5th inst.

Mr. W. HANCOCK (chairman) stated, that the present meeting was the second quarterly meeting of the company. The report of their proceedings would be submitted, and he had no doubt, found satisfactory. He then called on Mr. Alexander Campbell (their secretary) to read the report, from which we make the following extracts:—"Six months ago the company was formed, for the purpose of raising funds to enable an ingenious mechanic to make models, and obtain a patent for some valuable inventions connected with improvements in the construction and simplifying of locomotive, marine, and other engines; and also for improvements in propelling and stopping trains on railways; vertical force pumps for steam-vessels, &c. For that purpose the company resolved to raise a capital of 300*l.*, divided into 60 shares, of 5*l.* each; these shares had all been taken up by 24 working men, who were desirous of assisting one of their own order to obtain protection for his skill and labour, which the present defective state of the Patent Laws completely put it beyond the power of any working man to obtain by his own unaided exertions." "The company had obtained the great seal for letters patent for Mr. John Weston's inventions on the 16th of Feb. last, for which, and for making models, engines, &c., 250*l.* had been expended." "Their engineers reported that the model engine, of 20-horse power, would be ready for working in about a month, and by that time, also, the other parts of the inventions would be ready for specification." The report then stated, that there were not less than seven distinct inventions which Mr. Weston intended to specify under his patent, each of which would be of great importance to the public, in regard to locomotive, marine, and stationary engines, economy, and safety, &c.; but which could not be more particularly described until the specifications were completed, which would be in about two months.

Several extracts were then made from reports of civil and practical engineers, highly favourable to Mr. Weston's inventions:—"The company also contemplated the extension of their association, for the encouragement and protection of other ingenious men who required aid to make models and obtain patents for any motive power, improvements in machinery, or for any other discovery, which, in its application, may be deemed advantageous to the public, the inventor, and the association—one means to effect which was, to obtain an alteration in the Patent Laws; for which the company would soon bring the matter before the public."

Mr. JOSEPH WESTON thought the report so very satisfactory for the company, and important for preparing the public for these inventions, when the Patent Laws could allow them to be made known, that he would move, that the report be adopted, and, after being carefully revised by a committee, be printed—which, having been seconded by Mr. W. HANCOCK, was unanimously carried.

A resolution to the following effect was also moved, seconded, and unanimously agreed to:—"That a loan of 500*l.* be raised, for the purpose of obtaining letters patent for Mr. Weston's inventions in other parts of Europe and the United States of America."

Some other business having been settled, and a vote of thanks given to the chairman, the meeting was adjourned to the following Thursday.

LITERARY NOTICE.

Treatise on the Falsifications of Food, and the Chemical Means employed to detect them. By JOHN MITCHELL, M.C.S., author of a *Manual of Practical Assaying*. Baillière, Regent-street.

Since the publication of Accum's famous *Death in the Pot*, some 30 years since, we do not remember to have seen a work devoted, like the one under notice, exclusively to the adulterations of human food, and the chemical means of detection. The volume will prove a most seasonable one, as, during the period which has elapsed since Accum's experiments were published, numerous discoveries in chemistry have enabled the fraudulent manufacturer of human food to extend his means of adulteration—while, at the same time, it has enabled the chemist to devise greater facilities for its detection. The author has entertained by the author in publishing this interesting work, he states in his preface, is to supply the necessary information to the public, for the detection of adulteration in food, as, though not generally known, nearly all the substances used, either as articles of food or clothing, are adulterated, debased, or badly manufactured, and to an extent which would, at first sight, appear impossible. These sophistications are introduced with a view—1. To make the substance more saleable, by improving its appearance by the addition of some body, innocuous in other respects, but which, in general use, will be less known and cause applied tests for the discovery of impurities. Mr. Mitchell has already been long before the public; and, in addition to the numerous articles on metallurgy, published in our columns, is the author of an excellent work on practical assaying, which we favourably reviewed in the *Mining Journal* of June 27, 1846. The present volume detracts nothing from his scientific attainments, or his reputation as an author; and, we doubt not, the volume will find a ready sale, and obtain a place in the library of every respectable household.

The Metallurgical Treatment of Ores.

(Continued from June 3.—No. XX.)

FUSION OF TIN ORES IN THE REVERBERATORY FURNACE.—The furnaces are of the ordinary reverberatory kind, and generally contain from 12 to 14 cwt. of ore. The charge is prepared by mixing the ore with a quantity of dry coal in powder; the quantity varies from 1-16th to 1-8th of its weight, according to richness: in some works, a small quantity of lime is added, in order to increase the fusibility of the slags. The whole is well mixed, and moistened with water. This last precaution is useful in charging the mixture, as it prevents the dispersion of the ore by the draught of the furnace. The heat employed is very great, but it is only gradually increased; and, when the charging is accomplished, Mr. Taylor thinks that the most important point is so to manage the fire, that the tin shall be reduced to the metallic state before the slag commences to fuse; for he says, that if that be not the case, a white enamel is formed, which cannot be reduced. This can be avoided, however, by the addition of a considerable quantity of lime. Lastly, so great a heat is given, that the whole enters into fusion, which is to be kept up for six or eight hours; after which the whole contents of the furnace are well agitated, by means of rakes, so as to facilitate, as much as possible, the separation of the metal from the superabundant slag. It must now be allowed to remain at rest for a few minutes, the slag removed as perfectly as possible, the furnace tapped, and the metal run into the cast-iron vessel intended for its reception; the slag which collects on its surface is removed, and the metal cast into ingots, which are to be refined. The slag, as soon as it becomes hard, is divided into three classes—the first of which is too poor to be again treated; the second contains some grains of tin, is stamped and washed, and the residual tin and small admixture of slag re-fused; and the third, and last, is that collected from the surface of the metallic bath, and is sufficiently rich to undergo an immediate fusion. The working of tin ores is the easiest of all metallurgical operations, there being only two points to attend to—the first to reduce the metal before fusion takes place; the second, to obtain such a fluidity in the slag when fused, that the reduced and fused metal can readily pass through it, and collect in one mass. The lime added contributes much to the fusibility of the slag; the coal merely acts as a reducing agent, by abstracting the oxygen of the oxide of tin.

Refining Crude Tin.—The ingots of tin obtained in the above process, are generally more or less impure. Taking into consideration the density and fusibility of tin, in comparison with that of the substances contaminating it, the process of refining can be readily understood. The substances contained in the product of the first fusion, and which have to be separated, are generally iron, copper, tungsten, and a certain quantity of arseniurets, sulphurets, and some earthy matters, from slag that has not perfectly separated.

The refining furnace is a reverberatory furnace, very similar to that used in the reduction; but, in place of the reception basin, there is a refining basin, communicating directly with the furnace, into which the refined metal runs, as it passes from the furnace. The furnace being heated to such a moderate temperature, that the ingots of tin placed in it only very gradually enter into fusion, the fused metal runs into the refining basin, which is kept hot by means of a small fire underneath it. By this method (a kind of lixivation, as already described under the treatment of copper ores for silver) the more infusible substances remain in the furnace; this substance is a very ferruginous alloy. In proportion as the blocks of tin in the furnace disappear, and run off into the basin, fresh blocks are added, until the latter is full of melted metal. When all the tin has thus run off, the heat of the furnace is increased, so as to fuse the hitherto infusible residue, which is then run off into a separate vessel. After this there yet remains in the furnace a portion of infusible residue; this can be rejected. There is obtained, besides, the fused alloy last run off. This is a tranquil cooling separates into two layers; the upper one is impure tin, ready for refining, the lower a very brittle white crystalline alloy, which is useless. The first product of lixivation, or the fused tin, has to undergo another operation. It is stirred during some time, by taking up a portion in a ladle, and allowing it to fall back into the basin, from such a height as to agitate the whole mass. When this is finished, the surface is carefully skimmed, and the impurities separated—they consist of substances lighter than tin, but capable of being held in suspension in the bath, if they were not separated by agitation, and so carried to the surface. They consist principally of oxide of tin and iron, and are gradually returned to the furnace. In some cases this agitation of the melted tin is produced in another manner; a billet of green wood is introduced, and the constant ebullition of gaseous matter from it, agitates the whole of the metal so much, that the impurities are thrown up, as before. If the tin be now pure, it is cast into blocks; but if not, it must be allowed to remain at rest for some time, when the upper part of the tin—generally one half, and sometimes two-thirds—will be sufficiently pure for commercial purposes.

Grain-tin is made by heating a block of tin to a little below its fusing point, and then dropping it from some considerable height, by which it is broken up into columns, or fragments.

TREATMENT OF THE ORES OF ZINC.—This metal is met with in nature in a state of sulphuret and oxide, mixed, or combined, with other substances. From these result many compounds, which are not always employed for the extraction of the metal, but which we shall mention in a general way.

The sulphuret of zinc (blende, black-jack) is rarely found isolated in considerable quantities, but accompanies the sulphurets of other metals, lead more especially. The appearances presented by blende are very various—the purest has a sulphur yellow colour, and is very transparent; but it more often occurs of a reddish or greenish brown, or even black. A very considerable quantity of this ore exists in Derbyshire, Cumberland, and Cornwall; it also occurs in Sweden and Saxony, as well as in many other localities.

The following are some analyses of this ore from various places:—

Zinc	63.0	63.0	61.5	42.3	55.0
Iron	2.0	3.4	4.0	7.3	8.8
Sulphur	35.0	33.6	33.0	25.5	36.2
Gangue	—	—	1.5	24.9	—
	100.0	100.0	100.0	100.0	100.0

The next ore to be considered is the hydrated silicate of zinc (electric calamine). This ore is generally accompanied by anhydrous carbonate of zinc, and known generally as a variety of calamine. It is sometimes colourless, sometimes bluish, yellowish, or greyish white. The following are analyses of this kind of ore:—

Oxide of zinc	71.3	63.2	66.4	64.7	66.3
Silica	25.0	25.6	26.2	25.3	24.9
Water	—	1.0	7.4	9.5	7.4
Oxide of copper	2.7	—	—	3	—
manganese	—	—	—	—	—
Carbonate of zinc	—	—	—	—	3
Oxide of iron	7	4.8	—	—	1.1
Clay	—	3.4	—	—	—
	99.7	98.0	100.0	100.0	100.0

Anhydrous Carbonate of Zinc or Calamine.—This is the most common form of zinc ore—is found crystallised, and is white, yellowish, grey, or brown, and either transparent or opaque. It is very often found in thick layers or masses; it is found at Mendip, in Somersetshire, Matlock, in Derbyshire, Wenlock Head, and the Lead Hills, in Scotland; it also occurs at Alston Moor, in Cumberland. The following are analyses of several specimens of this variety:—

Oxide of zinc	56.4	58.6	58.7	45.2	56.2
Peroxide of iron	3.4	—	—	—	—
Oxide of lead	—	2.6	15.9	—	—
Carb. acid & water	34.2	29.6	27.0	30.6	32.4
Peroxide of iron	5.0	5.0	17.3	19.0	2.9
manganese	—	—	—	1.0	8.0
Gangue	0.4	3.6	1.0	3.8	1.0
	99.4	99.4	99.9	99.6	99.8

The principle on which the working of all these kinds of ores depends is very simple. The zinc in the ore is reduced to the state of oxide by roasting. If it be calamine, carbonic acid and water are disengaged; if it be blende, its sulphur is transformed into sulphurous acid and its zinc into oxide. In every case, therefore, oxide of zinc is finally operated on. It is mixed with carbonaceous matter, placed in a vessel, closed above and open below, so that the fused and vaporized zinc may pass into a reservoir below the distillatory apparatus; so that, in fact, the metallic zinc undergoes a complete distillation, being first of all vaporized, and then condensed in proper vessels. There is always, however, a very considerable preparation of the metal, but the causes, however, have not yet been very fully investigated, and are, therefore, rather uncertain.

Method of Roasting Zinc Ores.—This operation is indispensable for blendes, and extremely serviceable for calamines. In the first case, the sulphuret of zinc is converted into oxide; and in the latter, the expulsion of carbonic acid and water gives the ore a certain degree of porosity, which much favours its reduction.

Method of Roasting Blende.—This is effected in various ways, and with a considerable difference in the success of the result. It is sometimes roasted *per se*—sometimes with the addition of lime. At the brass foundry at Jemappe it is roasted *per se*, in a reverberatory furnace. The roasting is very easy; the ore remaining pulverulent, and not agglutinating in the slightest degree, if a very moderate amount of care be used in regulating the fire. As is usual in all roastings, the ore must be continually stirred, so as to expose fresh surfaces to the action of the atmosphere. In proportion as the blende becomes heated, it inflames; and when the smoke gradually diminishes, and at last entirely disappears, the operation is finished: 100 parts of blende give about 82 parts of roasted blende, which, according to Berthier, contains, in the 100 parts, oxide of zinc, 88.5; oxide of iron, 7.0; earthy matters and unacted on blende, 4.5=100.0. It is a remarkable fact, that no sulphate of zinc is formed during this operation, which is, doubtless, owing to the comparatively high temperature employed. In England we also obtain metallic tin from blende; this

ore washed and reduced to about the size of a nut, is sold at Holywell, on the mine, for about half the price of calamine. It is roasted, without any other preparation, in reverberatory furnaces. These furnaces are about 8 feet wide and 10 feet long; the distance from the furnace arch to the level of the sole hearth being about 30 inches. The layer of blende is about 4 or 5 inches in thickness, and, during the operation, is continually stirred. The blende requires about four times its weight of coal to roast it, and the operation lasts about 12 hours.

Roasting of Calamine.—This ore also requires roasting; that is to say, the operation of reduction proceeds more readily after the ore has passed the reverberatory furnace. We can, for instance, readily conceive that a lower temperature is required to roast calamine than is necessary to distil zinc, or reduce its oxide; besides which, the carbonic acid and water disengaged at the moment of roasting are two causes, opposing the mixture with the ore of hydro-carbonaceous matter, resulting from the decomposition of coal necessary for the reduction of the produced oxide. It is, therefore, advantageous that both water and carbonic acid should be separated before reduction be attempted. The following are the processes to which calamine is submitted before reduction, in some of the most modern works of Upper Silesia:—

The miners separate in the mine the calamine from the accompanying limestone, as well as from as much clay as possible. Sometimes, however, the calamine thus treated contains a sufficient quantity of clay to be prejudicial to future operations; this is separated, by exposing it for a considerable time to the action of the air. In order to effect this, it is arranged in heaps of a few cwt. each, and turned from time to time. The clay is soon removed by the rain, or by the moisture of the atmosphere, either washing it out or disintegrating it. It is then picked, and broken into pieces about the size of a pigeon's egg. The furnace employed in the operation is of the reverberatory kind. About three tons of calamine are treated at one time, one workman throwing it on the sole, and the other stirring and spreading it. The calamine being heated to redness, as soon as possible, by closing all the apertures in the furnace, is stirred from time to time, so that the whole mass may attain the same degree of heat, and the entire quantity of carbonic acid and water be expelled; this point can be ascertained by the facility with which the calamine breaks up, and by the colour it takes, which is brown for red calamine, and brownish red for white calamine. Each charge takes about six hours, so that four charges can be worked in a day. [In our next week's Journal we shall continue the treatment of the ores of zinc.]

(To be continued in next week's Mining Journal.)

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY.....Deptford, Rotherhithe, and Bermondsey Gas-Light and Coke Company—London Tavern, at One.
MONDAY.....National Brazilian Mining Association—at Twelve.
TUESDAY.....Conduwong Mining Company—on the mine.
 Wheal Soton Mining Company—on the mine.
 Rodmin and Wadebridge Railway—Nine Elms Station, at Twelve.
WEDNESDAY.....Great Indian Peninsula Railway—on the mine.
 Great Indian and Mersey Railway—London Tavern, at One.
 Mexican and South American Company—offices, at One.
 National Reversionary Investment Company—offices, at Two.
 Law Clerks' and General Provident Investment Company—Portugal Hotel, at Seven P.M.
THURSDAY.....Shrewsbury and Birmingham Railway—offices, at One.
 London Gas-Light and Coke Company—offices, at Eleven.
FRIDAY.....South Wheal Betsey Mining Co.—Buller's Arms, Mary Tavy, Devon.
 [The meetings of Mining Companies are inserted among the Mining Intelligence.]

BANK OF BRITISH NORTH AMERICA.

The annual general meeting of shareholders was held at the establishment, Saint Helen's-place, Bishopgate-street, on Tuesday, 6th inst., and was well attended.

Mr. G. DE B. ATTWOOD (the secretary) read the report, as follows:—

REPORT.
 In the report presented to the proprietors at the last annual general meeting, the directors referred to the probable reaction on the North American Colonies of a fall in the prices of agricultural produce, contingent upon an abundant harvest in Europe; and they also remarked that the directors had exercised the greatest caution in the business operations of the bank, owing to the severe pressure on the British money market. Their most anxious endeavours were devoted throughout the year to guard the bank from the disasters which they could not but apprehend from the above causes; and although, in passing through the unparalleled commercial calamities of the last autumn, losses to a greater extent than was expected have been incurred by the bank, the measures of precaution which the directors had caused to be taken have materially diminished an evil which it was beyond their power to prevent. The extreme scarcity of money which was experienced for a considerable period by the commercial classes in this country was, of necessity, soon felt throughout the North American colonies, in the withdrawal or curtailment of mercantile credits and banking accommodation. In submitting to the proprietors the usual statements of the results of the last year's business, the directors would remark, that the diminution in the net profits, as compared with those of the year 1846, has been occasioned by the increased amount which they have thought proper to set aside to meet the estimated losses by bad and doubtful debts; and although the rate of profit during the last quarter was materially diminished by the measures of precaution adopted by the directors, yet the gross profits of the bank for the entire year 1847 have exceeded those of any former year. The net profits for the year 1847, after making the required provision for bad and doubtful debts, not being found equal to a year's dividend, at the rate of 6 per cent. per annum, the directors, adhering to the principle laid down in the last report, feel that they best consult the real interests of the proprietors, by announcing their intention of paying a half-year's dividend on the 5th July next, at the rate of 3 per cent. per annum.

The amount of undivided net profit to the 31st Dec., 1846, was.....£61,457 8 6
 The net profit for the year, 1847, after deduction of all current charges, and providing for bad and doubtful debts, was.....54,045 3 0

From which is to be taken the amount of dividends, paid at Midsummer, 1847.....£30,000
 At Christmas, 1847.....30,000—60,000 0 0

Leaving amount of undivided net profit to 31st Dec., 1847.....£55,502 11 6

The CHAIRMAN said, that gentlemen had heard the report, and he could only state, that any questions they wished to ask, he should be happy to answer, as far as in his power. Mr. WHEATLEY observed, that on the last occasion he asked a question, which was said to be detrimental, if answered; but which, he maintained, would be for the good of the establishment. He now proposed to call their attention once more to it, and which related to the capital of that concern. He thought it was only fair for them to know in what position they stood, whether they were making profits or losses, for they could not tell which it was, unless they had a capital statement. It was usual for all banks to give a statement of their assets; and he could not see why this bank could not give the same to its proprietors. In case the directors were not prepared to do so, he would be determined to insist, that would be sufficient at present; he contended that it would not only be satisfactory to the proprietors, but would add to the well-being of the bank itself, if the directors allowed such a statement to go forth to the public. If the directors were of opinion that they could do this hereafter, he must abide satisfied; but if on the contrary, he should be compelled to submit a resolution to the meeting on the subject, as he considered it was a duty they owed to themselves to endeavour to get this statement. (Hear.)

The CHAIRMAN said, that at the last meeting, they were aware this question was discussed very fully. It had never been the practice to give the information required, and, for himself, he saw no reason to alter the course he had taken hitherto.

Mr. N. LEWIS thought, most certainly, the reasons ought to be given why they reserved this from the proprietors. Their money was embarked, and they were told that they must accept of 5, instead of 6, per cent., without knowing the why or wherefore.—The CHAIRMAN: I can only assure the meeting that their whole capital is intact; and, in addition thereto, there are the undivided profits. (Hear, hear.)

Mr. WHEATLEY said, that at the last meeting, they were aware this question was discussed very fully. It had never been the practice to give the information required, and, for himself, he saw no reason to alter the course he had taken hitherto.

Mr. OLIVER FARRER (a director) was sure that the directors would be as willing as any one else to take 1 per cent. more, if they found it could be done consistent with the interest of the bank. (Hear, hear.) They had been distinctly told, on a former occasion, that they would have no hesitation in reducing the dividend if the time should arrive; and he thought, if they did so now, when times had been what no one could have foreseen, and calamities had pervaded the whole commercial world, there was no reason to complain; indeed, in his opinion, compared with other institutions, he thought they had reason to console themselves. (Hear, hear.)

Capt. KELLY, R.N., perfectly recollected the observation of the chairman, that they would never divide a shilling but from the bank's returns of profit; therefore, it was not likely that they would divide a sum of money which must be taken either from their rest or their capital. He had two questions to ask, which, however, he would not press, if the directors should think them injudicious. The first was, what was the amount of the bad debts, in their estimation, for the current year?—The CHAIRMAN: The sum at which we estimate the bad and doubtful debts for the year is 25,000.—that is up to the present time.—Capt. KELLY, R.N., observed, that, taking the pressure in the money market into consideration, he was quite prepared for that.

The CHAIRMAN:—They are entirely provided for out of the year's profit. (Hear, hear.)

Capt. KELLY, R.N.:—After that you divide the profits, and no more?

The CHAIRMAN:—The year's profits are 54,000, and we divide 60,000, which is close enough. (Hear, hear.)

Mr. BARNWELL:—That is, 25,000 being deducted from the profits, leaves 54,000.

Capt. KELLY, R.N.:—Has our rest been touched to the extent of 60,000?

The CHAIRMAN replied in the affirmative.

Mr. GILLESPIE (a director) said that, at the end of this year, supposing they paid the dividend, they would have 30,000 surplus out of last year's profits, instead of having 10,000 surplus, as they had after paying last year's dividend out of the profits of the year preceding.

Capt. KELLY, R.N., observed that, when they divided up the 31st of December, 1846, they had 61,000; and when they divided up to December, 1847, they had 54,000, of rest.

The CHAIRMAN:—The profits are taken up to the 31st December, 1847; but we are declaring a dividend six months afterwards, which leaves some profit for the six months from December, 1847, till now, and so leaves 55,000.—Capt. KELLY, R.N., was satisfied; for to divide 6 per cent., when they had only made 5 per cent. profit, in his opinion, would be most injudicious. (Hear, hear.)

Mr. GILLESPIE hoped it was clear that they would be in a better position at the end of

the present year; but, of course, they had reduced the dividend to the extent of 10,000. Mr. CHAMBERLAIN said, that the question was, whether they were to have a full account, or statement, of their affairs, more particularly as they only met there once a year. Did the body of directors set their faces against this? (No, no.) He believed they were obliged to make some statement in the *London Gazette*, or did they not publish some account in the colonies? Could they not make them a little earlier for the use of the shareholders in England? The London and Westminster Bank, as well as the Colonial Bank, made such statements to the proprietors.

Mr. J. J. CHAMBERS (a director) observed that, by not publishing the accounts, it must not be understood that the directors set themselves in opposition to the proprietors. (No, no.) Discussions had arisen several times on the subject, when the propositions had always been withdrawn.

Capt. CHAMBERLAIN thought, as the directors were not opposed to the object, the resolution had better be withdrawn.

Mr. R. CARTER (a director) said, they did publish every year in the *Gazette* a statement of the accounts and liabilities of the bank, which he thought was all the hon. proprietor could obtain by his motion. (Hear, hear.) It was not the wish of any director to withhold any information from the shareholders that was beneficial for them to be acquainted with.

Mr. G. R. ROBINSON, M.P. (a director), could not see the propriety of going into a very great detail of figures; for, if the shareholders possessed that, they would not be able to arrive at any better opinion of the concern than from the report just read to the meeting.

Capt. KELLY then moved, that the report be received, approved, and printed, for the use of the proprietors.—Mr. LEWIS seconded the motion, which was passed unanimously.

James Dowie, Esq., Alexander Gillespie, Esq., and G. R. Robinson, Esq., M.P., the directors who retired, were then re-elected unanimously.

Mr. N. LEWIS thought, after the ample explanations of the directors, the question, as to the accounts, had better be left to their discretion. (Hear, hear.)—Mr. WHEATLEY then agreed to withdraw his motion; but he hoped that the publication in the *Gazette* would be so managed as to appear a few days before their meetings. (Hear, hear.)

The CHAIRMAN said, it would be published, in a few days, for the year 1847; and he saw no objection to its being placed, in future, in the *London Gazette* a few days before the annual meetings. (Hear, hear.)—A vote of thanks was unanimously passed to the chairman and directors, when the meeting adjourned.

REGENT'S CANAL COMPANY.

The half-yearly general meeting of shareholders was held at the offices, City-road Basin, on Wednesday, the 7th inst.—The Marquis of SALISBURY, K.G., in the chair.—The SECRETARY read the report, and the balance-sheet, which showed the receipts for the half-year to have been from tonnage and wharfage, 29,429; rents, 2240; dividends on stock, &c., 3667.8s.—making a total of 25,035.8s. The expenses for the same period were 11,408.0s. 3d.—leaving a net profit for the half-year of 13,627.7s. 10d. The assets and liabilities up to the 31st March were—assets, amount due from traders, 9537.0s. 8d.; from tenants, 1281.18s. 4d.; shares, 11107; stock Three per Consols, 6828.11s. 11d.; cash in hand of treasurer, 1847.0s. 11d.; amount of loan, 5000; expended on new works, 6383.9s. 4d.; cost of pumping water, 464.4s. 9d.—making a total of 32,395.8s. 11d. The liabilities were—dividends unpaid, 3161.14s.; creditors, 2208.16s. 7d.; borrowed, 5000; reserved fund, 7763.0s. 3d.; profit balance from former account, 574.1s. 2d.; profit for last half-year, 13,627.7s. 10d.—making a total of 32,395.8s. 11d. A dividend of 12s. 6d. per share was recommended.—The CHAIRMAN moved the adoption of the report.

Mr. HITCHENS objected to the reserve fund being invested in Consols. They were put down at 100, when in point of fact they were only worth 80. The money should be invested in Exchequer Bills, or some certain stock. A public body ought always to have its balance available at a moment's notice, and not subject to fluctuations.

Mr. MAYHEW complained, that the accounts were fallacious, and, therefore, he submitted that the dividend could not be 12s. 6d. per share.—Alderman WILSON fully concurred in Mr. Mayhew's remarks. It was the duty of the auditors to make up the accounts properly, and he (Mr. Wilson) had no doubt sufficient had been said on the subject to induce them to make an alteration in future.—The subject then dropped.

Mr. GREEN observed, that the reserved fund was 7763; that 5000 had been borrowed; that the company were paying 5 per cent. interest on 9000, whilst the reserved fund was invested at 3 per cent. He thought it would have been a much more advisable course to have borrowed their own money, which they could have done had it been in hard cash.—The report was then adopted and the meeting separated.

GRAND JUNCTION CANAL COMPANY.

At the half-yearly meeting of proprietors, held at the Crown and Anchor Tavern, Strand, on Tuesday, the 6th inst.—The Hon. P. P. BOUVIER, in the chair.—a very satisfactory report was read, the principal topics of which related to the success of the new carrying system, recommended to the proprietors at the last meeting. In pursuance of the policy so recommended, the committee had confined their trials to two lines—1. Between London and Manchester, of which the once productive traffic of the canal had for several years entirely ceased; and 2. Between London and Derby, Leicester and Nottingham. In both cases the results had been satisfactory, and a considerable portion of the trade with Manchester had been restored to the canal; whilst, on the other line, there was a steady increase. In contrast to this, however, the committee regretted to say, that there had been since Christmas last a continued decrease in the general tonnage of the canal, as compared with previous years, which renders the carrying trade an act of self-protection. In order to provide the necessary funds for this object, the committee recommended the creation of a 6 per cent. preferential stock, to be distributed ratably amongst the proprietors. The tonnage for the half-year amounted to 43,498.13s. 6d., and the whole revenue during the same period amounted to 51,444.15s. 1d. The balance was 30,794.11s. 2d., out of which the committee recommended a dividend of 22.10s. per share, free of income tax.

GRAND UNION CANAL COMPANY.

At a meeting of shareholders, held at the office of the company, Surrey-street, Strand, on Monday, the 5th inst.—Vere FANE, Esq., in the chair.—the following report was read and adopted:—

The following is the usual comparative statement of tonnages, charged for the 6 and 12 months ending respectively on the 31st March, 1847, and 1848:—

The tonnage for the six months, to the 31st March, 1847, produced.....	£4307 4 0
The tonnage for the six months, to the 31st March, 1848, gave.....	4288 2 1
The decrease in the six months being.....	£ 19 1 11

The tonnage for the 12 months, to the 31st March, 1847, produced.....£7832 18 8

The tonnage for the 12 months, to the 31st March, 1848, gave.....8395 6 1

The increase on the 12 months being.....£ 762 7 10

Receipts and Expenditure of the Company for the Six Months ending March 31, 1848.

RECEIPTS.	
Balance in favour of the company on the 30th Sept., 1847.....	£6550 3 7
Tonnages received in the half-year ending 31st March, 1848.....	4592 1 10
Rents received.....	29 4 0
Miscellaneous receipts.....	135 16 4
Total.....	£11,407 5 9

PAYMENTS.	
Repairs and management.....	£ 985 15 5
Rents and taxes, including property tax.....	150 15 2
Damages.....	7 0 0
Miscellaneous disbursements.....	49 4 7

Drawback on 3039½ tons of coals to London, at 4½d. and 5½d.....	66 2 8
Mr. Harrop—cash advanced in last account.....	2 19 1
Dividends paid.....	3330 10 0
Balance in favour of the company on the 31st March, 1848:—	£4592 7 5

With the treasurer's cash.....£1152 10 9

Ditto Exchequer Bills.....500 0 0

Leicester and Banking Company.....532 11 3

Goddards, bankrupts.....129 16 4—£4,614 18 4

Total.....£11,407 5 9

Of the tonnage charged to the 31st March last, and payable monthly by traders, who are allowed credit, there remained due at that time the sum of 1224.18s. 4d.; but of this sum 603.8s. 8d. now only remains due to the company on this day.

In pursuance of the resolution of the special assembly, held on the 1st Nov. last, the committee caused notices to be inserted in the *London Gazette*, and in the *Leicester and Northamptonshire newspapers*, stating the company's intention of availing themselves of the powers and provisions of the Acts of Parliament of the 8th and 9th Vic., cap. 28 and 42, to enable canal companies to become carriers of goods on their respective canals.

The committee have had under their consideration the repeated applications of the coal-owners and traders on the canal for a further reduction of tonnage on coal; and the whole line of canals, from the Cornford to the Grand Union, having at length agreed to a reduction of 11½d. per ton, your committee have concurred in this—though not without reluctance—and the share on our canal of this reduction will be 1½d. per ton. This reduction, calculated on the coal trade of the last few years, may involve a loss in the instance to some extent, perhaps £1000 a-year; but they feel justified in holding out to the proprietors the hope, that a very increased trade may be anticipated, and such loss, therefore, only temporary. The very great competition by the railways, however, has made the reduction necessary.

The committee recommended the declaration of a dividend of £1 per share, amounting to the sum of 8449.10s., to be payable on the 19th June inst.

The inspecting engineer,

Mining Correspondence.

ENGLISH MINES.

ANTIMONY AND SILVER-LEAD.—Captain Charles Williams (June 4) reports.—We have 9 fms. to drive from the present end to cut No. 1 lode, as it underlies west; we shall cut this lode about 4 fms. deep. The lead lode last discovered has considerably increased in size, it being now 3 ft. wide, with a beautiful lead-spar, muncie, and lead, but not so rich for the latter as when first cut; but there can be no doubt but that it will be so shortly, as the lode is split up, and now appears to be coming together again. It is not more than 16 or 18 ft. deep; our end, also, is full of very strong muncie, underlaying to No. 1 lode; the end is set at 85s., and driving on the new lode at 30s. As regards the Grenville adit, the east and west lode cut there underlays south, with some good spots of lead in it. The newly-discovered lode is underlaying east, but No. 1 lode is underlaying west, as well as the Wheel Sarah lode. Some of the silver which we have assayed from our new discovery, produces 300 ozs. of silver to the ton.

BARRISTOWN.—Captain Thomas Angove (June 2) reports.—In the adit end, east of Nangle's shaft, the lode is rather improved for lead since my last, but still producing no regular quantity; the lode in the winze, in the bottom of adit level, is producing less, or than last reported, from a slide that has just gone through the winze; the pitches in the back of this level are producing a fair quantity of ore; in the bottom of the level we are greatly obstructed in working from the adit water. The pitches in the old mine are poor. The cross-cut, south from eastern flat-roof shaft, is very wet; and, from the appearance of the ground, we think we are getting near the lode. In the level, east of Slob shaft, there is no change.

BEDFORD UNITED.—Capt. T. Ellery (June 7) reports.—At Wheel Marquis, the ground in the engine-shaft is favourable. In the 90 fm. level east we are still carrying 2 ft. of the lode, which is producing good saving work; the lode in the 90 fm. level west is without alteration; in the stopes, in the back of this level, the lode is still worth 35s. per fm. The lode in the 80 fm. level east is 2 ft. wide, producing good stones of ore. In Evans's winze, in the 70 fm. level, the lode is 3 ft. wide, producing good work. We have stopped the 47 fm. level east, and put the men to drive south in the 90 fm. level. The pitches remain much the same as for some time past.

BIRCH TOR AND VITIFER.—Capt. S. Secombe (June 5) reports.—I find the sett to be a very extensive one, embracing many parallel lodes, which have been found more or less productive for tin, so far as wrought on; these lodes cross a deep valley nearly at right angles. The greatest extent of the workings has been on, what is called, the Birch Tor lode, and worked by a former company to the depth of 62 fathoms below the deep adit, and from which they realised a very large amount of profit; the greatest part of the tin was broken from this lode, west of the valley; and, for its further development, the present company have embarked a large amount of capital—the greater portion of which has been expended in the erection of water-wheels, stamps, opening leads, clearing adits, shafts, &c., with a large quantity of materials; after this, great preparations were made. I am sorry to say, that very little work has been done towards effecting the object sought after. The ground sunk by the present company in the engine-shaft has only been 12 fms.—making the shaft 74 fms. below the adit; at this depth a level has been driven west on the course of the lode a few fathoms, which was found to contain a small quantity of tin; if the driving of this level had been continued, it would have proved that part of the lode over which the former company realised the greater part of their profits. Being of opinion that the driving of this level would have laid open a large quantity of good tin ground, I think it an object of very great regret that the pitwork should have been so hastily taken up before the last trial had been made. The principal part of the underground operations done by the present company, in laying open this lode, has been east of Guppy's shaft, which is about 100 fms. east of the engine-shaft; from this shaft (Guppy's) three levels have been driven below the adit—the 11 fm. level about 20 fms., the 23 fm. level about 30 fms., and the 40 level about 10 fms.; the lode in each of these levels was not found to contain a sufficient quantity of tin to pay for working; but, from the appearance of the lode gone down in the bottom of the deep adit further east, near Pridaun's shaft, which is about 60 fathoms east of Guppy's, the 11 fm. level, if continued, would have laid open some valuable tin ground; as there appears to be a good bunch of tin for many fathoms in length, to prove its value in depth, I would recommend you to sink Pridaun's shaft 10 fms., which might be done at a very small expense, there being plenty of spare materials on the mine. The deep adit has been driven east of Pridaun's shaft about 100 fms., about 40 ft. of which by the present company; the last 8 fms. have been productive ground, and the back over is now being worked on tribute; the lode in this end at present is large, and contains some good work for tin; and, taking into consideration the great depth this end is below the surface, no time should be lost in resuming its driving, as this would prove, by a small outlay, the eastern ground. There are three levels driven east on the course of the lode, between the deep adit and the surface, in which some good tin ground has been met with; but I cannot recommend the driving of these levels until the lode in the deep adit should be found sufficiently productive to justify it. There are two lodes to the north of the Birch Tor lode, on the backs of which the ancients have extensively worked; these lodes could be laid open to a great depth, by driving the deep adit north to intersect them. About 80 fathoms south of Birch Tor is the Vitifer lode, on the course of which, west of the valley, an immense quantity of work has been done; the whole of the lode, for a considerable length, appears to have been all removed for tin, as deep as the water could be drained; it is to the development of this lode I would particularly call the attention of the shareholders; to lay open this lode in depth a shaft has been commenced, and sunk about 8 fms. below the surface—there remains about 5 fms. to sink to the deep adit. Near this shaft there is a large water-wheel, about 40 feet diameter, and 31 feet in breast, with a good supply of water, which is of sufficient power to drain the lode to some considerable depth; the shaft should be sunk at least 15 fathoms below the adit, and at that depth levels to be driven east and west, which would prove the value of the lode under the afore-mentioned workings; to apply the power of this wheel to draining the water of this mine, a short line of flat-rods would be required; the cost of this, and the necessary pitwork, would be merely the labour part, as nearly all the materials that would be required for that purpose you have already on the mine. I would strongly recommend you to lose no time in making the necessary preparations, and resume the sinking; as I believe, by the aid of a small amount of capital, judiciously laid out, that a profitable and lasting mine would be established. With such encouraging prospects as I consider are held out in the part of the sett, and every necessary machinery being already erected, both for draining and stamping, I do sincerely hope that the present company will give it a fair trial; and believe, by doing so, they will be amply repaid for the required outlay.

CALLINGTON.—Captain J. T. Phillips (June 5) reports.—Kelly Bray engine-shaft is now being sunk by nine men below the 35 fm. level; we have set 8 fms. at 11s. 10s. per fm.; in the north engine-shaft the ground is harder than usual. In the 100 fm. level south no alteration has taken place. In the 90 south we are opening tribute ground; in the eastern end the ground is favourable for driving; we expect to cut the great cross-course before the expiration of this month. In the 70 east we have no change to remark; in the stopes the lode will produce 6 tons per fm. In the 50 we are still driving south to the east of the small cross-course. At the south mine, in the 125 north, the lode looks very promising, producing silver-lead ores. The 112, both north and south, is tribute ground, and is being opened. In the 100 and 90 north no lode has been taken down. We expect to sample a parcel of copper ores to-morrow, computed 100 tons.

CARWINNING HILL.—Captain John Cock (June 7) reports.—We have cut the lode in Roger's shaft, the appearance rather promising—it is looking better in the shaft for copper than it has been in the winze, the last 4 fms.; the lode in the winze is more productive at present than it has been since we cut the crossing. In No. 2 winze no alteration since my last, producing good stones of grey copper. The stopes, in the back of deep adit, are looking favourable, producing good stones of bell metal, and grey copper, and abundance of malchite—the smalls of which are sifted and put to pile, as the exposure to water will take off the greens which would reduce the quality; the adit end is productive for copper; in the adit west, on the course of the lode, are small particles of copper, interspersed throughout the lode. We are going on with dressing as fast as we can; we are enlarging the dressing plat, and we hope to be in a position to double the number of dressers in a short time. There are seven Cornish dressers sent here by Mr. J. Richards; but, in consequence of not having a Cornish carpenter to make jigging machines, we shall not be able to employ them all at this time. Capt. Francis has written to his friends in Wales for a carpenter, and we hope he will be at this mine in a few days. If we are obliged to wait on the Scotch carpenters to do the work, we shall be very much behind in dressing.

COATLITHE HILLS.—Captain J. M. Paull (June 3) reports.—On getting deeper into the haze belt, we have discovered that the vein has separated into small strings, in consequence of being so near the outburst of the strata; but, from their appearance, I expect, in a little distance eastward, they will all be joined together. The vein is still producing some good stones of lead ore, intermixed with fider, spar, and soft clay, and has a promising appearance.

CWM ERFIN.—Capt. S. Nicholls (June 3) reports.—The men in the whim-shaft have sunk 5 ft. this week; the lode is just as last reported, with some stones of ore; the end is just the same as last week's report; the stopes, west of whim-shaft, is worth 10 cwt. of ore to the fm.; the stopes, east of whim-shaft, is worth 15 cwt. of ore to the fm.; there is a piece of ground to the east end of the stopes which is not so good for ore, but the west end of the stopes is just as last reported. The stopes, west of the eastern shaft, is worth 6 cwt. of ore to the fm. The men in the engine-shaft are taking down ground for a plat, and to make room to sink, which they will complete next week.

DEAN PRIOR AND BUCKFASTLEIGH.—Capt. J. Carpenter (June 3) reports.—The engine-shaft is sinking under the 30 fm. level very satisfactorily; the stratum is rather improved, and very likely to continue as we progress with it in depth; the pitwork being completed to the 30 fm. level, we have thought it prudent to place three men more to expedite the sinking, till it is down to the intended 40 fm. level—as I believe, from the present appearance of the lode in the 30, both east and west of the shaft, there is every probability of its producing satisfactory results; the north part of the lode, east of shaft, is 5 feet wide, interspersed with copper ore and muncie; as there is more lode to the south, we have given directions to cut into the south wall, to ascertain its full size and properties, it being divided by a horse of killas; the lode, west of shaft, is more than 7 ft. wide, including the capels on the south part, carrying a leader of muncie, spotted with copper ore, 5 inches big; the north part about 4 ft. in width, composed of spar, peach, and some good stones of yellow ore, is more solid than I have seen in the 20 fm. level above this part. The lode in the bottom of the 20, west of the winze, is much improved since it passed through a slide. The machinery is working very well, and the new stamps in full operation, preparing the ore to mix with the parcel already cleaned.—Captain H. Choake (June 7) reports.—We are getting on with the sinking in the engine-shaft as well as we can expect, not having a lift of pumps fixed under the 30; the water being favourable, we are sinking with barrels, for at pre-

sent we can make a greater progress; and we have increased the number of men from six to nine, in order to get down with all possible dispatch, to prove the lode to the 40 fm. level. We have commenced cross-cutting south in the 30 fm. level, east of the cross-cut, or engine-shaft, in order to prove the south part of the lode; in this level, driving west, we have a large strong lode, from 7 to 8 ft. wide, carrying a leader of muncie about 5 in. big, which are good indications. The lode in the pitch, in the bottom of the 20, is somewhat improved. We have a sufficient stream of water for working the stamps, and shall get on with stamping the work with all possible speed.

DEVON AND COURTENAY.—Capt. N. Secombe (June 6) reports.—In the end driving west, on the gossan lode, the lode is 1 ft. wide, composed of muncie, spar, and spots of ore; in the end driving south, on the cross-course, there has not been any lode discovered this week. The lode in the winze, sinking in the bottom of the 40 fm. level, on the south lode, is 15 in. wide, good saving work; in the end driving east, on the south lode, we have intersected the slide seen in the 30 fm. level; this has happened sooner than was expected, owing to the dip of the slide not being so much as it appeared to be in the level above. In our 50 fm. level, we are driving on the cross-course north, to intersect the lodes. The men have been partly engaged this week in removing penthouse, casing shaft, &c.

EAST CROWDALE.—Capt. S. Paul (June 3) reports.—The ground in the 58 fm. level still continues spare to drive in its composition, being just precisely as when last reported upon; the ground in the 58 fm. level south is composed of soft killas, spar, and capel, and is favourable to drive on. The lode in the 47 fm. level west is not quite so large as when last reported upon; it is about 10 in. wide, composed of capel, spar, muncie, and good stones of ore, and has altogether a favourable appearance; the stopes, in the back of this level, are in appearance just as usual, nearly 2 feet wide on an average, composed of muncie, peach, spar, capel, and ore; the winze, sinking below the 47 fm. level west, is not so good as when last reported upon, the lode being much mixed up with killas, which has deranged its appearance. The lode in the engine-shaft at Rix Hill is still about 5 ft. wide, composed of elvan, spar, peach, capel, and spots of tin. The end driving on the course of the south lode, in Rix Hill adit, is about 2½ ft. wide, composed of peach, muncie, spar, and at times spots of tin.

EXMOOR WHEEL ELIZA.—Capt. W. H. Whitford and Thomas Dunn (June 7) report.—There is no material alteration in this mine since our last. The progress of our driving the 12 fm. cross-cut is about 6 ft. per week—set now at 6s. per fm.; we expect to cut the lode within the time first named.

GREAT MICHELL CONSOLS.—Capt. T. Richards (June 7) reports.—We have divided and cased down the sump-winze from the 35 to the 45 fm. level; put in penthouse, &c., so as to draw the stuff broken from the levels with the whim, instead of by manual labour. In the 45 fm. level, east of the sump-winze, the part of the lode being carried 3 ft., is very promising, composed of muncie, fluor, and stones of ore. In this level, west of the winze, the lode is producing stones of ore, intermixed with muncie, fluor, and spar, and is, in its general character, indicating an improvement. In the 35 fm. level west, the lode is without important alteration, containing muncie, capel, spar, and ore.

HOLMBUSH.—Captain William Lean (June 6) reports.—The lode in the 132 fm. level, west of the diagonal shaft, is still divided in small branches of spar, muncie, and spots of copper ore. The lode in the 120 fm. level south is 5 ft. wide, composed of spar, prian, and lead, worth 5s. per fm.; we have set a rise in the back of this level, both to ventilate and to lay open tribute ground. The lode in the 110 fm. level south is 4½ ft. wide, composed of quartz, prian and lead, worth 5s. per fm. The lode in the 100 fm. level south is 2 ft. wide composed of prian, spar, and stones of lead—saving work; the rise being about 7 fms. above the back of this level, we thought advisable to suspend it, and set each end of it on tribute; and we intend sinking through the remaining 3 fms., from the 90 fm. level, to make the communication; the winze, below this level, is likewise suspended—being sunk 7 fms. below the 100, and each end of it is set on tribute. We shall effect a communication to this winze by rising above the back of the 110 fm. level. The Flap Jack lode, in the 100 fm. level east, is 3 ft. wide, composed of spar, muncie, blende, and stones of copper ore, with favourable ground for driving. The lode in the 90 fathom level south is 20 in. wide, composed of spar, flookan, and stones of lead.

KIRKCUDBRIGHTSHIRE.—The agents (June 3) report.—In consequence of the water being in last week, and the railway in Stewart's shaft so much out of repair, the sumpmen have been taking out and relaying it this week; for the same cause the 50 fm. level, west of Stewart's shaft, is without alteration; on the north lode likewise, there being but little done in either. The 40 west has been communicated to Keith's shaft; in the 40, west of Keith's, the lode is about 18 in. wide, with good stones of lead; the end on the cauter in this level has not improved since last report. In the 30 end, west of Keith's shaft, the lode is 3½ ft. wide, yielding good stones of lead, and in a kindly rock; in the same level, east of Stewart's, the lode is about 3 ft. wide, with a fine mixture of lead through it—say, 5 or 6 cwt. of lead to the fathom.

LEWIS.—Capt. S. J. Noell (June 3) reports.—The lode in the 70 west is 1 ft. wide, unproductive at present; the lode in the 70 west, on the south branch, is 3 in. wide, producing good quality tinmuck. The lode in the 60 east is 2½ feet wide, producing some tin, and very promising; the lode on the 60 east, on south branch, is 5 in. wide, yielding some good work for tin; the lode in the 60 west, on south branch, is 4 ft. wide, worth 50s. per fm. The 50 fm. level end east, on south branch, is now being driven at 10s. 6d. in 14, for saving the tin, where I think the tributaries are making fair wages. The lode in the 40 east, on south branch, is small and unproductive. The south lode, in the 20 east, is 8 inches wide, yielding fair quality tinmuck—driving at 11s. tribute. The south lode, in the 10 east, is yielding some good work for tin—driving at 12s. tribute.

SOUTH DOLCOATH.—Capt. P. Floyd (June 6) reports.—We have commenced casing the shaft from the 40 to the 50 fm. level; we have also set a plat, to cut in the latter level; and on the completion of these two bargains, we shall resume sinking the engine-shaft; we have taken the run of the lode towards the cross-course in the different levels, laid the same down at surface, and find the distance from the engine-shaft to the said cross-course to be 104 fms. We have set several pits to coasten near the cross-course.

SOUTH WHEEL BETSY.—Capt. J. Spargo (June 8) reports.—We have got through the hard bar of ground that we came in contact with, in driving the eastern cross-cut to cut Wheel Betsy lode; the country, or clay-slate, is mineralised throughout the end, and the water is very powerful, penetrating through the fissures (or quarries) of the country, which, of course, accounts for our getting near the lode. According to the underlay of the lode in the shallow adit, we have about 4½ fms. more to drive to cut it, which will leave a bar of 27 fms. from the bottom of the shallow adit. We have also commenced driving west to cut the new lode, which is opened on at surface, by shodding upwards of 70 fms. in length, and is of a most promising character—we have about 4 fms. to drive to cut it, which we hope to complete in four weeks; and, according to the appearance of the rich gossan at surface, we have every reason to expect to find the lode productive, as it will be cut 40 fms. deep from the surface. We shall put a couple of men to open on the copper lode in a few days, as we have only opened on it by one pit, where it is 6 ft. wide, producing large rocks of muncie, gossan, blue peach, spar, and spots of copper—a kindly lode.

SOUTH WHEEL MARIA.—Capt. George Francis (June 8) reports.—The ground in the south cross-cut, in the 20 fm. level from the engine-shaft, continues with little or no alteration—driving about 6 feet per week. The cauter lode on which we are driving, is from 1 ft. to 18 in. big, composed of prian, muncie, &c., with some spots of lead ore.

TAMAR SILVER-LEAD.—Captain J. Sprague (June 5) reports.—In the 175 fm. level end, south of the shaft, the lode is 2 ft. wide, producing good work; in the north end, in this point, the lode is 18 in. wide—work of a good quality. In the 160 end, south of the shaft, the lode is 1 ft. wide, composed of capel, with spots of ore. In the 145 end the lode is small and unproductive. In the 135 end the lode is 3 ft. wide, yielding work of a promising character. In the winze, in the bottom of the 145 fm. level, the lode is 18 in. wide, 9 in. of which is good work. In the winze, sinking below the 135 fm. level, the lode is 2 ft. wide, saving work, but not rich. At the north mine, the sumpmen are engaged putting in penthouse, and which I hope will be completed by the end of this week, when we intend to commence sinking the engine-shaft. In the 70 end the lode is 3 ft. wide, interspersed with ore. In the winze, sinking below the 60 fm. level, the lode is 2½ ft. wide, 6 in. of which is rich work. We sampled, on Saturday, the 3d inst., computed 79 tons, of rich silver-lead ores. I am sorry to state, we have had a misfortune in breaking the whim chain, which injured the whim-shaft, so as to disable us from drawing a part of the tributaries work, in consequence of which we are short in our sampling.

TIN VALE.—Captain John Floyd (June 5) reports.—On Saturday, the 3d, our usual survey took place for the public setting, to the lowest bidders, of all the different works in this mine. Aland's shaft was taken at 2s. per fm.—extent 10 fms.; when completed, Aland's shaft will be 16½ fms. deep; it has been reported, that the great cauter lode was in the bottom of the aforesaid shaft; it is not the case; it is 6 ft. north-east of the present bottom; and at that distance there is the lode from 4 to 6 ft. wide, as reported, producing good saving work for tin: it is a very handsome lode indeed; I shall be able to let you know more about this lode in my next, as the said lode will go through, or be in, the shaft in about 2 fathoms deeper: the water in the shaft at this time is four 18-gallon barrels per hour; and should the lode continue down (and I see no reason why it should not), we shall, by the end of next week, be rising and drawing large quantities of tinmuck to grass. At Rose's adit, the ground in the cross-cut, driving south, is rather stiff, and a great deal of water proceeding out of the end, and from the different branches we are intersecting; the said branches are droppers falling into the great cauter lode, which are good indications for making abundance of tin ore: I set the aforesaid to drive for 4s. 16s. per fathom, to six men—extent, 6 fms. In the end of the middle lode, going south-east, the lode is 2 ft. wide, composed of blue capel, quartz, mica, red flookan, and a small portion of tin—a very kindly lode indeed; I set this end, also, on Saturday to two men—extent, 6 fathoms, at 30s. per fm.; we are saving the tinny part of this lode for stamping. The tributaries on the north

lode, in the back and bottom, south-east and west of the cross-cut, are getting fair wages; their time will not be up until the end of this month; they are working their pitches for 10s. in 17. At the streams, I have put several men to work on the tin, and it is very likely we shall shortly be making good returns from them. I have also to inform you, that I put the smith's and carpenter's work to a public survey, and, by so doing, have made a saving of 5s. 6s. per month. We shall complete stamping and cleaning the tributaries' tin on Wednesday next, and then shall commence stamping the owners', so as to get a good batch of tin for the market. On the whole, our mine is looking extremely well, and all things go on with prosperity.

TINCROFT.—Capt. P. Floyd (June 6) reports.—The 142 fm. level, east on Highburrow lode, is worth 10s. per fm. The stopes in the back of the 120 fm. level are worth 17s. per fm. The 100 fm. level, west on Chapple's lode, is 3 ft. wide, with spots of ore; in this level we have got about 10 or 12 fms. more to drive, in order to get under the ore ground gone down in the level above. The 90 fm. level west is worth 18s. per fm. The 80 fm. level west is worth 16s. per fm. The 58 fm. level east, on Dobree's lode, is 15 in. wide, with spots of ore; the 58 fm. level west is 18 in. wide, with stones of good quality ore. At North Tincroft, the lode in the 100 fm. level east is worth 6s. per fm.; in the 100 fm. level west we have cut the cross-course, and expect to cut the lode again shortly. The 90 fm. level east is worth 10s. per fm.; in the winze, in the bottom of this level, the lode is worth 8s. per fm.; in the 90 fm. level west the lode is 2½ ft. wide, with stones of ore. In the 80 fm. level east the lode is worth 8s. per fm. The lode in the 60 fm. level east is worth 4s. per fm. The 80 fm. level west, on East Pool lode, is at present poor. The 70 fathom level west is worth 16s. per fm. At Stainby's shaft, we have communicated with the adit coming from East Wheel Croft, and are now engaged in cutting plat and fixing penthouse, &c., in order to commence sinking the shaft below the adit as soon as possible.

TREGORDEN MINE.—Capt. Robt. Dunstan (May 29) reports.—This mine is situate in the parish of Egloskayle, near Wadebridge, Cornwall, and is within a mile from the shipping port, whence all kinds of minerals can be exported, and materials imported to great advantage, with little expense of land carriage. The stratum in which the lode is found is killas, of a light drab colour, moderately soft, and easy for working. The sett extends upwards of 500 fms. on the course of the lode, and presents such indications as are seldom seen so near the surface. The lode, which has just been discovered, is composed of gossan and spar, with a fair quantity of lead. Several assays have been taken, which prove the lead to be rich for silver, producing from 77 to 151 ozs. of silver to the ton of ore. The lode has been operated on by sinking two shafts, each from 15 to 18 ft. deep, and from 80 to 90 fms. apart; it continues to look well in both shafts, which proves it to be of some good extent. On the whole, I consider it to be a very inviting adventure.

TRELEIGH CONSOLS.—Capt. William Symons (June 3) reports.—In the 120 fm. level, east of Christoe's, the lode is 2½ ft. wide, but not much ore. Garden's shaft, below the 100, is sinking in the country. In the 100, west of Garden's, the lode is 3 ft. wide, with good stones—rather of a promising character. The 90 west is cross-cutting south to cut a south part of the lode; the 90 east is cross-cutting north to cut a north part of the lode. In the 80, west of ditto, the lode is 15 in. wide, with good stones of ore, and more promising. In the 70, west of ditto, the lode is 2½ ft. wide, worth 12s. per fm. In the winze, below the 60 west, the lode is 2 ft. wide, worth 6s. per fm. In the 50, west of ditto, the lode is 18 in. wide, worth 5s. per fm. In the adit east, on Wheel Parent, the lode is 2½ ft. wide, producing good stones of ore. The cross-cut, north of Wheel Parent, is to cut Wheel Orphan lode.

WEST WHEEL JEWEL.—Capt. Richard Johns (June 5) reports.—In the 57 fm. level, west of Williams's cross-course, on Wheel Jewel lode, the lode is 2 ft. wide, worth 12s. per fm.—drove last month, 1 fm. 1 ft.; in the 57 fm. level, east of ditto, on same lode, the lode is 1 ft. wide, worth 4s. per fm.—drove last month, 1 fm. 2 ft.; the rise in the back of the 57, on Williams's cross-course, was risen last month 3 fms. 5 ft. In the 70 fm. level, west of Williams's cross-course, on same lode, the lode is 14 in. wide, worth 5s. per fathom—drove last month, 1 fm. 2 ft. The 30 cross-cut, south from Tolearne tin lode, was driven last month 1 fm. 1 ft. 6 in. In the deep adit, west of Hodges's cross-course, on the same lode, the lode is worth 3s. per fm.—drove last month, 2 fms. 1 ft. 6 in. In the deep adit, west of Quarry shaft, on Tolearne tin lode, the lode is 2 feet wide, poor—drove last month, 3 ft. 9 in. Tregoning's shaft was sunk last month, 3 fms. 2 ft. 6 in. The men that have been cutting south-west of the stopes, in the 12 fm. level, will work the bottom of this level on tribute, as soon as the tinwork is cleared that was broken last month; the lode in this place is worth 20s. per fathom.

WHEEL ANDERTON.—Capt. James Carpenter (June 6) reports.—Agreeably to my promise at the meeting, on the 27th April last, I beg to apprise you of the lode being cut in the 80 fm. level; the time and distance, as specified then, has been realised. I refrained from reporting at its intersection—waiting till its size was ascertained. On this morning's inspection, I am satisfied as regards its width, which is 8 ft. from the north to the south wall; the underlay south is 7 in. in a fathom—therefore, the deeper we have sunk the less it underlays, which I conceive to be one of the principal features in a lode to be observed, as a criterion for the future productiveness, especially as it is far superior in appearance, and producing more tin, than in any level above at its first intersection. There is a leader of very good work on the north wall, 2½ ft. wide; the middle part of the lode is composed of a white elvan, almost bordering on an appearance of granite, interspersed with spots and floors of tin ore. On the south wall, the part that carries tin varies from 18 in. to 2 ft. wide—on the whole, very good work. I must say, from the general appearance of the lode, I have great confidence in the ultimate success of our undertaking, as its size, and properties, are materially improved in depth. I have also to add, that the 70 fm. level, west of engine-shaft, is looking well, and, in all probability, from the stopes in the bottom of the 60, 6 fms. west of the 70 end, we shall soon have it much richer than at present. The several pitches in the bottom of the 60, and back of the 70 fm. levels, are producing a sufficient quantity of tin to remunerate the tributaries fairly at 6s., 6s. 6d., and 8s. in 17. I shall sample about 6 tons of tin ore next Monday, which would have been done to day, had not a misfortune occurred in the crown wheel of the stamps axle; however, it is now set right, and we are going on with the stamping as fast as possible—the steam-engine driving the 21 heads, and drawing the stuff as occasion requires.—Since the preceding was written, there is a great improvement in the 60 west, under the bottom of the level.—June 9.

WHEEL LOOSELEIGH.—Captain N. Anthony reports.—Since I last wrote you, we have discovered a branch of excellent copper ore in the adit level, about 25 fms. from the mouth of the adit, which is running due east and west, and is about 4 in. big, composed of yellow ore and spar, in a bright blue killas; we are now in with the adit 38 fms., and have 11 fms. more to drive to cut the north lode; the lode is now in the bottom of the sink about 5 feet big, and a more promising lode cannot be seen, composed of spar, gossan, and a large leader of spar, carrying some muncie and copper, bearing g due east and west; we shall cut this lode in three weeks, unless we meet with much harder ground than we have had all through the level: we are now giving 45s. per fm.; and all our cost is paid up to the 11th May, leaving a small balance in hand.

WHEEL MARY ANN.—Capt. Peter Clymo, jun. (June 5), reports.—The lode in the 40 fm. level, south of Barratt's shaft, is 3 ft. wide, and worth 25s. per fm. The lode in the 30 fm. level, south of Barratt's shaft, is 2½ ft. wide, and worth 10s. per fm. Pollard's shaft is sunk 6 fms. under the 30 fm. level. The lode in the 30 fm. level, north of Pollard's shaft, is 1½ ft. wide, composed of gossan, can, and some lead; in the same level south it is 2 ft. wide, and worth 4s. per fm. The lode in the winze, sinking under the 15 fm. level, south of Pollard's shaft, is 2 ft. wide, producing some good stones of lead. The 15 fm. level, south of Pollard's shaft, is suspended until the above winze is holed to the 30 fm. level. The stopes generally are looking well.

WHEEL SARAH.—Capt. J. Spargo (June 8) reports.—In bringing up our lobby from the river, we have got into a solid shelf, which is very soft for driving—we have set men to drive at 3s. per fm., until they get into the depth of 12 ft.; they are now within a few feet of that depth, and will commence driving close, so as to unwater the shaft; we have secured and timbered the shaft, and the shaftmen are getting on satisfactorily with sinking; we are repairing a smith's shop; and the materials, large smiths' bellows, &c. that I purchased at Wheel Martha sale, are on the mine. I have put a man to open a few pits on the lead lode that is discovered in the antimony sett, which I shall report next week.

WHEEL TRELAUNY.—Capt. John Bryant (June 6) reports.—Our fixing the lift, and doing other work, preparatory to sinking Phillips's shaft, under the 62 fm. level, will, I expect, be completed by Thursday next; the lode in the rise, near the 62 end north, is very similar to my last report, worth about 7s. per fm.; in the 62 south the lode is worth 8s. per fathom. The lode in the 52 north is small, and in a disordered state, producing good stones of lead; however, judging from the run of ore ground in the 42 fm. level, I look forward to an improvement in this end shortly; in this level south the lode is 2 ft. wide, composed of spar and can, with a leader of lead, yielding about 8 cwt. of ore per fm.; we have resumed sinking the winze, under this level, where the lode is still large, producing about a ton and a half of ore per fm.; the lode in the 42 north is 2 ft. wide, composed chiefly of can and lead, worth 8s. per fm.; the stopes generally throughout the mine are improved since my last. There is no change of importance in Trelawny's shaft, or in the 22 cross-cut east. At the north mine, the lode in the 30 fm. level, north of Smith's shaft, is large, and worth 8s. per fm. We sampled a parcel of ore, computed 38 tons, on the 3d inst., which is to be sold on the 12th.

CARDIGANSHIRE GREAT LEAD-BASES.—We trust to be able to lay before our readers a full statement, accompanied with a hand-sketch of this important mining district, in the manner in which we have given the Caradon and Camborne districts.

CANNARVONSHIRE GREAT SLATE FORMATION.—We are also making arrangements for a sketch and particulars of this district.

We have been informed, that Mr. C. S. Richardson, with an efficient staff of assistants, some of whom are from Cornwall, are now engaged in making a complete survey of the great slate vein and mineral property on the lordship of Mowdwy, in Merionethshire, part of which is also for a railway from Dinas to Derwenlas, to connect the various quarries with a shipping port.

After a very lengthy discussion respecting some forfeited shares, and again relating to the nature of the Cost-Book System, it was resolved, that the present number of shares into which the mine is divided be increased from 250 to 513; and that a call of 10s. per share, upon each subdivided share, be made, payable on or before the 17th day of July next.

JOINT-STOCK COMPANIES AND CORNISH MINES.

Sir,—It is much to be regretted that so many people in this world speak without thought, and write without knowledge. Your Truro correspondent belongs to this latter class. I can imagine, from the constitution of his mind, that he is little acquainted with what is noble in thought, or dignified in action, or he would not impute the exercise of the legislative function—the highest and most sacred delegation—to the influence of personal feeling, or of private revenge. An individual of such a mental complexion will readily, either from his ignorance, or from interested motives, state that which is untrue, and, for his bad purposes, argue from the false premises as if they were received truths; but that the intelligent Editor of the *Mining Journal* should have adopted the fallacy without investigation, I can only attribute to the Editor receiving the letter of his Truro correspondent at a late period of the week; and as he, no doubt, thought the subject of much importance to his readers, and that the statements contained in the letter were correct, he at once commented upon them without inquiry, and I am afraid without so much as reading the bill, which is the subject of his own and his correspondent's vituperation. But where are the facts? The 7th and 8th of Vic., c. 110, is intitled, "An Act for the Registration, Incorporation, and Regulation of Joint-Stock Companies;" and clause 64 exempts all mines worked upon the Cost-book System from the operation of the Act. An Act was subsequently passed—the 8th of Vic., c. 8—intituled, "An Act for the winding-up of the affairs of Joint-Stock Companies unable to meet their pecuniary engagements;" but, as this Act was not efficient in its working, an Act was brought in by Mr. Milner Gibson, in July, 1847, to amend the 8th Victoria. This bill passed through the committee; but the dissolution of Parliament prevented the completion of the legislative form, and the bill did not become a law. At the commencement of the present session, a more complete and detailed measure was introduced by Mr. Gibson. This bill has passed through the Commons; and it was into this bill that I introduced a clause, that "All associations, or companies, formed for working mines or minerals, shall be liable to the operations of this Act."

1. As to the mode in which this clause was introduced; and, 2d, as to its intention.—This clause was not smuggled into the bill, as your correspondent, and your own remarks, would seem to imply; but a notice of my intention to introduce this clause, and the words of the clause itself, were printed amongst the notices of motions, for at least a fortnight before the third reading of the bill. During that time, it was reprinted several times amongst the Parliamentary notices, and also in the London newspapers, which generally, on Monday morning, print the notices of motions for the week. All possible public notoriety was, therefore, given of my intention to introduce this clause, and that it was well known, and the effects of it well understood in some places, is testified by my receiving several letters upon the subject from different parts of England, and all of them approving of the clause. I had several conversations with Mr. Milner Gibson, who has charge of the bill, upon this subject; and, in the first instance, he thought that all mining companies would come under the operation of his bill, and stated to me, that such was his intention; but subsequently Mr. Milner Gibson, and the law officers of the Crown, thought it well that this clause should be inserted. Thus the bill, and the clause to which you object, were before the country long enough for those interested in mining pursuits to make any objection, if they had any to make; and, I presume, the Members for Truro, "who lay claim to the special duty of watching over and protecting our mining interests," were so satisfied with the prospective beneficial working of the proposed clause, that neither from their own judgments, nor the representations of their constituents, did they offer any impediment to the enactment; and it is only when the bill has passed, that a solitary Truro Cornish miner emerges from his obscurity to offer any objection.

2. The Act, known as the Joint-Stock Companies' Act, is an Act for the compulsory registration of Joint-Stock Companies; and if the Cornish mines, worked upon the Cost-book System, had been subject to the operation of this Act, it would have caused them much trouble, expense, and inconvenience; they were, therefore, upon very good grounds, exempted from its operations; but the bill, which has just passed the House of Commons, is for the winding up of bankrupt and insolvent companies, and will neither bring mines, properly worked upon the Cost-book System, under the control of the Joint-Stock Companies' Act, nor will it, in the slightest degree, affect their management. Instead of inflicting injury upon legitimate mining operations, it will clear the country of many insolvent schemes, which are falsely said to be managed upon the Cost-book System.

There are mines in Wales, Scotland, Ireland, and upon the continent of Europe, which are said to be managed upon the Cost-book System—and in which schemes no one of the requirements of the Cost-book System are observed. These schemes are brought before the public, the shares are puffed to a premium, the original promoters sell their shares, and the purchasers, upon the supposition that the Cost-book System will afford them ample protection, find that they can neither obtain a statement of their accounts, and are, in many cases, sued at law for liabilities incurred without their sanction or knowledge. In these companies, many of whom are conducted in the large cities of our island, the hapless shareholders, and still more unfortunate creditors, have no remedy. The Stannaries' Court could not take cognisance of their proceedings, as its jurisdiction is confined to Cornwall; and a suit in equity is the only legal remedy which the partners in the undertaking have against the promoters of the scheme. These dishonest schemes have diverted a large amount of the capital, which would have been otherwise invested in legitimate Cornish mining; they have disgusted many people who would have been good adventurers in mining undertakings, and prevented the employment of thousands of the mining population, and inflicted a serious blow upon the commerce of Cornwall.

I hope, Sir, that both yourself and your Truro correspondent have now read the bill, and that you have found I have not deserved your censure. I differ very widely from yourself upon the repeal of the duties upon copper ores; and the labour I have undergone, and the sacrifices I have made of many personal friendships, upon this question, must convince you that, although I may be mistaken in my views of this policy, I am anxious to protect, as far as I can, the well-being of the Cornish miner, and the interests of the county of Cornwall.

House of Commons, June 6. JAMES WYLD.

CORNISH MINES AND THE JOINT-STOCK COMPANIES' BILL.

Sir,—From the tenor of an article in the last *Mining Journal*, and from a letter contained in the same paper, I am led to believe that there has been some misapprehension as to the object of the bill to which Mr. Wyld's amendment applies. That bill calls itself the Joint-Stock Companies' Bill, when, in fact, it is the Joint-Stock Companies' Dissolution Bill. I can perceive nothing in it which will affect the Cornish mines for good or ill; and I am confirmed in that opinion by a gentleman of great authority in mining concerns, whom I often consult. Had there been anything in the bill tending to put the Cornish mines on the same footing as joint-stock companies, in respect to registration, the transfer of shares, &c., of course Mr. Wyld's amendment would have been opposed.—C. LEMON: Charles-street, Berkeley-square, June 5.

[Some remarks on the subject of these letters appear in another column.]

CARADON CONSOLS MINE.

Sir,—Can you inform me, when the final dividend of the assets of this mine will be made? There is some extraordinary circumstance or other acting as an impediment to the settlement of this affair, which it would be well for the pursuer to explain. I take it for granted, that he is above doing anything wrong in the matter; but surely, after so long a time has elapsed, it ought to be settled immediately, and a correct balance-sheet transmitted to every shareholder. If this be not speedily done, a meeting of the shareholders must be called, to consider the steps necessary to enforce an early settlement.—verbum sat.—SCITATOR: June 7.

GREAT WHEEL MARTHA MINE.

Sir,—No doubt you recollect that, about a year ago, the shareholders of the Great Wheel Martha agreed to a plan for raising new capital to work the mine, by the issue of "preference shares"—the holders of which were granted considerable advantages by the old shareholders; but both parties were likely, indeed, to be benefited by the arrangement entered into. The first call of 12 per share was made by the directors, and responded to by myself and others; and I understand that, eventually, it was paid on all the shares, although the whole were not allotted in the first instance; but about two months after this, and without making another call, the directors, in a most unaccountable manner, called us together again to discuss and to endeavour to get us to agree to another plan for raising capital—urging, as the ostensible reason, that the former one would not produce sufficient funds! Whose fault was that, had it been the case? The estimates were their own; and they could or ought to have calculated the utmost they would require at first, when they could have got the money more easily. But the consequence was, that, when they proposed the second plan, without giving the preference shareholders, who had paid 12 per share, any value in the new company for what they had paid on the faith of the former agreement, every one so objected to their conduct, they failed in their attempt; and by your *Journal* I observed, a short time ago, that the materials were advertised for sale. Now, without going minutely into the question, I may say, that I saw a report upon the mine by a very intelligent miner, in which it was proposed to carry out certain workings, and which he considered would lead to a successful result—or, at all events, that the indications would likely be such as to justify the adventurers in proceeding further. The funds proposed to be raised by the preference shares were sufficient for this; and I cannot see upon what grounds the directors determined to sink 40 fms. at the new mine (that is, to the 80 fms. level), before again driving a level, particularly when their great fault has been in driving so many "shallow and worthless" levels. It often happens that, when men are excited of one extreme, they run into the other. What I complain of is—that they did not apply the funds, to be raised by the preference shares, to trying the mine as I have alluded to, and in the best manner for the share-

holders; and that, by their mismanagement, they have deprived us of all chance of recovering the immense sum spent—the act being considered very promising. If you will do me the favour of inserting this letter in your valuable *Journal*, it may call forth the opinions of some more of the unfortunate shareholders; for I consider that the directors are liable to refund us the 12 per share we paid upon our preference shares.

A SHAREHOLDER.

WHEEL CURTIS MINING COMPANY.

Sir,—In looking over your last two *Journals*, I am astonished at the report you give of the Wheel Curtis Mine—a mine, ever since it was determined to re-commence working, you have invariably spoken of in the highest terms, and the adventurers always looked forward to having a prosperous and dividend-paying mine; but now, with 31. 10s. per share paid up, you inform them they are in a state of bankruptcy. I am sorry to say, I think "there is something very rotten in the state of Denmark" with respect to mining, and not very much unlike swindling the adventurers out of their money. It seems to be a common practice to puff off mines in the papers (witness Dartmoor, and several others I could name now defunct), to pay cost in a few months, with only a portion of the subscribed capital to be paid up, in order to catch the young adventurer; but as soon as the promoters of the undertaking have succeeded in procuring the requisite number of shareholders (themselves holding the lion's share, as in Wheel Curtis), and not able or inclined to pay up the calls upon those shares, and the greater amount of capital having been paid up by the body of shareholders, and all devices having failed, by issuing preference shares, &c., the bubble bursts, and the adventurer finds himself done out of his money, and, perhaps, liable for a large amount of debts, over which he had no control, and not instrumental in creating, and without redress. This, and this only, in my opinion, in which many concur, is the reason that mining is in such bad repute amongst capitalists. Mining captains and agents ought to be very careful when they report upon the qualifications of a mine, and not lead adventurers astray, by making a very flaming and flowery report, to please the promoters of a very questionable and doubtful scheme. Hoping you will take up the above subject with your powerful pen in your next *Journal*, and give insertion to it, I must apologise for the length of my letter, but I think the case requires it.—A SUBSCRIBER: Manchester, June 6.

[Some observations on this communication will be found in another column.]

TUTWORK AND TRIBUTE.

Sir,—I am quite aware that too much has been already said on this question—indeed, when the letter of "Mine Agent of 22 Years' Standing" first appeared, I thought the subject too ridiculous to be noticed in your columns; and, however, so much has been written on the question, tending to mislead, I ask the favour of being permitted to make a few observations in explanation. This "Mine Agent," as well as many others of long standing in Devon and Cornwall, must remember that the plan, now brought forward as new, is nothing more or less than an old and long since exploded plan, which was fully tried 30 years since, and signally failed; among the mines where it was tried were Wheal Friendship, Lanecot, and others; but it was not acted on more than six months, and during that time the captains had enough of it—private bargains were being set all the month round, in consequence of contracts being thrown up, which were taken at less than a fair price for the survey. It was soon found that all the good steady hands were being driven away, and their places supplied by scamps and vagabonds from the surrounding districts, who would take bargains, steal the powder, candles, &c., and never work at all. The agents were afraid to venture out of doors after dark, and almost frightened to go underground for fear of ill-usage. These are facts which are well known to the neighbourhood to have arisen from the adoption of the system; and, as to the fairness of the plan, I consider it of an equally cheating character as when a dealer asks a certain price for a watch, silk handkerchief, or other commodity, and afterwards consents to take one-half—it is, in fact, still worse to offer a poor man only half the fair price for his labour, when, with all his exertions, he can scarcely obtain bread for his family. The average gettings of miners in the counties of Devon and Cornwall fully show they are not overpaid, even with the hardest work. I could enumerate many evils attendant on this proposed system, but you and your readers must be tired of the subject. "Mine Agent of 22 Years' Standing" may call me a slow coach; but when it is considered he is recommending a plan exploded nearly 80 years since, I cannot consider him an over fast one. AN ADVENTURER.

Tutwork, May 30.

[We insert this communication as coming from an old correspondent, and also showing that the plan has been tried and failed; but must now positively decline inserting anything further on the subject.]

THE "DIVINING ROD."

In the course of Mr. Hunt's lectures, on the "History and Practice of Mining in the British Isles," published in the *Mining Journal* in the early part of the present year, he referred to the discovery of lodes by the divining rod, and several letters from correspondents thereon were also inserted in subsequent numbers. We have this week received the following interesting details of the apparently successful use of the ridiculed and almost obsolete practice of dowsing with the divining rod:—"Tell unbeliever R. W., when you next see him, that I have witnessed the operation of the divining rod, in a manner most conclusive and satisfactory to my own mind. I went, accompanied by Mr. H., first to Wheal Jane, the underground captain of which is what they call a douser. He ordered one of the men to cut half-a-dozen withes, of the requisite shape, from a neighbouring hedge; and we then proceeded to a field, across which the lode lay. We each held a rod, and walked abreast, the captain in the middle. Upon crossing the lode his rod bent downwards, and, to my surprise and delight, I felt, at the same time, mine pressing against the flesh of the finger, when it went down gradually from being perpendicular to horizontal, but would not go lower. Mr. H. remained perfectly stationary! We tried it again and again with the same result—the captain's, however, going lower and more freely than mine. We then went to another mine beyond Perran, and sent for a labouring miner from underground, who is a celebrated douser. We had another gentleman, a Mr. C., with us, an old farmer, a clerk of this mine, and myself—thus making six, all armed with rods. On crossing the lode, the douser's rod went down like a shot, completely inverted! Mine went down gradually, but its pressure was quite perceptible, until one of the limbs of the rod, close to my fist, actually broke off, from the mysterious force in operation. Now, holding my hands perfectly still, and grasping each limb of the rod, it is impossible to move it downwards by any voluntary motion, much less to break it. Mr. H. remained as usual, quite stationary, as also the clerk's; the farmer's and Mr. C.'s acted nearly as powerfully as mine, very much to the astonishment of the latter, who was an unbeliever. If this does not satisfy R. W., I will give him up." I may mention that it will not act with one person out of 50, or perhaps, out of 100.—H. F. PENNY: Notting Hill, June 7.

If he wants more, we blundered the douser, and took him over the field in every direction, backwards and forwards, sometimes pretending we were near the lode. But no; it moved not—but immediately we crossed it, down it went.

TRENNANCE MINES.

The following is the general report for May month, and settings for June:—
No. 1. The deep ad level to drive south as directed, by 4 men—1 fm. in extent, at 6d. per fm. This level has become softer with an additional quantity of water; and, as may be seen, is let for 10s. per fm. less than last month. The air has become very bad—we expect shortly to have a change of ground. There is no appearance of ore.
No. 2. The deep ad level to drive north as directed, by 8 men, 2 fms. in extent, at 3s. 6d. per fm. This end has become better for driving, with a soft vein of stonate, or white spar, clay. It would have been let for less amount this month, had not the length of distance which the stuff has to be brought become so great. We may now hear the men above in the 12 fm. south-west level (Dalton) working very distinctly.
No. 3. The 12 fm. south-west level (Dalton) to stop up as directed, by 2 men, 2 fms. in extent, and no allowance for getting the ore, at 20s. per fm. In last month's report it was mentioned that we had stopped the driving further of this end, and had commenced stopping it up; and, in my last letter, that we had laid bare, and was working on, the side of a fine quantity of malleable copper and grey ore. On Monday last, we began to take up, and on that day and ending Tuesday evening, we got to have upwards of 3 tons out of which 12 cwt. is malleable copper and horseflesh ore; we have also raised, and which is now lying in the 12 fm. level (Dalton), one solid piece of malleable copper, with portions of horseflesh ore about it, which cannot be estimated at less than between 30 and 30 cwt.; which, we may fairly say, is the largest and heaviest piece of malleable copper raised in Cornwall. At the bottom from whence this was taken is seen a fine course of malleable copper and grey ore, dipping down. We shall have to erect some stronger tackle to get this lump of malleable copper out of the mine, as it is impossible to break it up more than we have done in the level, and even to get it in the state in which it is we have had two shots set in it. Could we conveniently have preserved it whole, it would have measured not less than 25 ft. in length.
No. 4. A winze to sink from the 12 fm. level (Dalton) as directed, by 9 men, 1 fm. in extent, at 51. 10s. per fm. In my letter of the 24th May, it is noticed our being drowned out from this pit, and that we placed the men in the Maria shaft; since then I am glad to inform you, that the water has so much decreased in this winze as to allow us to commence sinking again; we have, therefore, given up the Maria shaft for the present, and have placed our greatest strength to this part of the mines (nine men sinking and eight men driving to meet them), for the reason that the appearances are of a most extraordinary nature. I am very anxious to have the winze sunk, and the 30 fm. level north driven up as quickly as possible, and before the half-yearly meeting; the water is not so very bad, and I trust we shall without much hindrance. There is a fine course of malleable copper and grey ore at the bottom of the winze, which may increase; and, from the appearance of the angle of inclination (from the south-west level 12 fms. from Walton), we may be led to conclude that it is a continuation (deeper) of the same lode. The Maria shaft, when given up, was very hard, sinking through not so much water as before—there was no appearance of ore at the bottom. The quantity of ore raised this month, ending on Saturday last, or the setting day, may be estimated at 10 cwt. as raised. An estimate, or valuation, of the materials shall be taken, ending last Saturday night.

June 7.

P.S.—This company has lately sold to the Mines Royal Company a parcel of malleable copper, at 7d. per lb.

[It will be perceived, by the ticketing paper of this day, that a parcel of ore, 15 tons, from this mine was sold, on Thursday last, 9 tons of which produced 194. 6d. per ton—the whole realising 2900. 9s. 6d.]

LEEDS AND THIRSK RAILWAY.—That portion of the Leeds and Thirsk line, extending from Thirsk to Ripon, has been formally opened.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.	
Bank Stock, 9 per Cent., 191 3	Belgian, 41 per Cent., 58 1/2
3 per Cent. Reduced Ann., 62 1/2	Dutch, 31 per Cent., 47 1/2
3 per Cent. Consols Ann., 84 1/2	Brazilian, 5 per Cent., 68
2 1/2 per Cent. Ann., 84 1/2	Chilian, 6 per Cent., 75 80
Long Annuities, 8 1/2	Mexican 5 per Cent., 115
India Stock, 10 1/2 per Cent., 224	Russian, 5 per Cent., 66 1/2
3 per Cent. Consols for Acc., 84 1/2	Spanish, 5 per Cent., 117 1/2
Exchange Bills, 1000l. 20. 36. 40 pm.	Ditto 3 per Cent., 32 1/2

MINES.—The amount of business transacted in the mining share market this week has been unimportant; nor has any of the negotiations, referred to in our last, yet come off; but if we can place any estimate upon these inquiries, we may, however, calculate on a fair proportion of business before our next publication. South Caradon bi-monthly account was held on the 50th of May, when a dividend of 107. per 128th share, was declared—leaving a balance of 1641. 19s. to the credit of the company.

An improvement in Great Rough Tor has produced a considerable inquiry for them, but we are not advised of many transactions.

Business has been done in Tamar, Herodfoot, Mary Ann, Trehan, Trelawny, Gwinnar Consols, Great Wheel Rough Tor, Devon and Courtenay, South Basset, West Providence, Camborne Consols, West Wheel Treasury, Tincroft, Cwm Erfin, Mendip Hills, &c.

The committee of management of South Trelawny have made a call of 2s. per 256th share this week.

A meeting of the Lamherose Wheal Maria adventurers was held on the 8th inst., when a call was determined on of 30s. per share, or 3000l., with the object of prosecuting the operations of the mine by sinking the engine-shaft—thus evidencing the opinion entertained by the adventurers of the value attached to the adventure.

The transactions in foreign shares have been but limited, and appear confined to a few Asturians, Australians, St. John del Rey, and United Mexicans.

The Asturian Mining Company have received letters since our last notice, representing the progress at the iron furnaces as very satisfactory, as well as the returns from quicksilver.

Imperial Brazilian Company is advised to April 18th. The pitwork, &c., had not arrived at Bananal, but arrangements were made for their conveyance. The returns from Gongo Soco, up to that date, was 9 lbs. 9 ozs. 1 dwt.

St. John del Rey Mining Company held their eighteenth annual meeting yesterday (Friday), a report of which will be found inserted in another column. The reports from the mines are of a very satisfactory character, and present a considerable improvement in their general prospects. The balance-sheet extends from the 31st of May, 1847, to the 7th of June, 1848; and shows the receipts to be 73,281l.; consisting of balance from last account, 2421l. 19s.; proceeds of six shipments of gold, 66,710l. 5s.; railway debentures paid off, and interest, 4149l. 13s. The expenditure, in acceptances, drafts of agents at the mines, salaries in the country and at home, stores, hire of negroes, two half-yearly dividends of 11,000l., income tax, balance at banker's, &c., of 14,666l., and other contingent expenses, balance the account.

The instructions from the directors to the superintendent of the mines, relative to the negroes in their employ, have been of a benevolent, enlightened, and humane character, and the extracts, which will be found in our report of the meeting, merit especial notice.

Since our last, the following arrivals of specie have been announced:—3d June, at Southampton, the Royal West Indian Mail steam-ship, *Scorpa*, having on freight 5107,000 on merchant's account, 9466 ozs. of gold dust, 23,740l. in British coin, and silver bars—total value of specie and bullion, 80,640l. Also, 17 packages of platinum and general cargo. Also, at Southampton, the same day, the Peninsular and Oriental Steam Navigation Company's ship, *Madrid*, having on freight 28 packages of gold and silver coin (value 13,700l.). On Tuesday, at Liverpool, from New York, the Royal Mail steam-ship, *Cambria*, having on freight specie to the value of 73,000l. On Wednesday, at Southampton, the Peninsular and Oriental Steam Navigation Company's ship, *Tagus*, with an unusually valuable freight, and 450 packages of gold and silver coin, value 213,000l. We have to notice the following arrivals of specie, silver ore, copper, and copper ores, &c., in the port of London during the week—viz.: ex *Horburgh*, from Coquimbó and Guayaquil, 90 packages of dollars, 10 bars of platinum, and 13,059 ingots of copper; ex *Lady Mary*, from Valparaiso, 384 bars of copper, 87 bags of copper grains, and 124 packages of silver ore; ex *Blue Bell*, from Alago Bay and the Cape of Good Hope, 3 kegs ann 2 boxes of specie; ex *Prince Albert* (American liner), from New York, 7 packages of specie; ex *Hamlet*, from Sydney, 1 case of silver; ex *Fedor*, from Calcutta, 500 boxes of specie, consigned to the East India Company; ex *Marborough*, also from Calcutta, 2 boxes of specie, consigned to order, and 200 boxes of rupees, for the East India Company; ex *Panama*, from Valparaiso, 779 bars of copper, 45 tons of copper regulus, and 1525 packages of silver ore; ex *British Sovereign*, from Port Adelaide, 300 tons of copper and lead ore.

RAILWAYS.—During the first two days of the week, the share market partook of the same dull and tame character as it closed with last week. On Wednesday, however, the report of the capture of four of the Chartist leaders imparted a considerable degree of confidence in the city, where it is generally hoped the Government will follow up its measures with firmness. The home funds exhibited a steady tone, which evidently imparted a firmer aspect to the share market; and business closed yesterday with somewhat better prospects.

HULL, THURSDAY.—Shares are dull and declining—the old stocks especially, owing to calls and issues of preference shares, as a means of raising capital in the absence of borrowing facilities. If the Government would only offer to assist railways by loans, it would inspire confidence in these undertakings—induce private capitalists to lend them money, and thus afford employment to thousands willing to work, but who now swell Chartist meetings, because they are starving and neglected.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rwy.	Present actual cost.	Price per share.	Last Div.	Traffic Returns.	1848	1847
Birkenhead, Lancashire, & Chesh.	15	997,284	87	5 p.c.	£ 785	839	2
Caledonian	180	3,594,470	31 1/2	—	—	—	2
Chester and Holyhead	50 1/2	2,871,470	22	—	764	—	2
Dublin and Drogheda	25	574,529	23 1/2	—	806	994	2
Dublin and Kingstown	7 1/2	473,289	22	6	1424	1421	2
Dundee, Perth, & Aberdeen June.	47	415,073	28 1/2	8	501	402	2
East Anglian (Lynn to Ely)	55 1/2	1,062,742	72	—	—	—	2
East Lancashire	26	1,733,915	18 1/2	—	999	1386	2
Eastern Counties and Norfolk	295	9,833,899	14 1/2	4	14718	13596	2
Eastern Union	51 1/2	979,926	20	—	1217	1128	2
Edinburgh and Glasgow	53	2,481,767	20	—	3430	3655	2
Edinburgh and Northern	29	1,392,092	18	4	1485	—	2
Glasgow, Paisley, and Ayr	64 1/2	2,097,321	72 1/2	6	2349	2709	2
Glasgow, Paisley, & Greenock	23	845,554	15 1/2	4	1113	1264	2
Gr. Southern & Western, Ireland	110 1/2	1,809,787	22 1/2	4	2193	1328	2
Great Western	281 1/2	10,970,636	90 1/2	7	20551	21385	2
Kendal and Windermere	10 1/2	169,889	23	—	100	—	2
Lancaster and Carlisle	70	1,328,193	49 1/2	6	1889	1786	2
Lancashire and Yorkshire	136 1/2	7,597,618	96 1/2	7	9244	11462	2
London and North Western	428	21,513,354	134 1/2	8	42034	45994	2
London and Blackwall	4	1,241,061	42 1/2	12	1202	1579	2
London, Brighton, & South Coast	161 1/2	6,087,822	81	4	8607	10941	2
London and South Western	189	6,264,164	47 1/2	6	8780	9652	2
Londonderry and Enniskillen	14 1/2	145,135	16	—	139	118	2
Manchester, Sheffield, & Lincolnsh.	62	2,886,624	60 1/2	5	2621	3185	2
Manchester and Bolton	28	440,851	40	—	—	—	2
Midland Company	422 1/2	9,853,122	102	7	19172	23931	2
Midland Great Western (Irish)	36 1/2	725,332	10 1/2	4	1068	—	2
Newcastle and Carlisle	66 1/2	1,407,375	111	6	2012	2349	2
North British	81	2,800,744	21 1/2	5	2188	1940	2
Shrewsbury and Chester	17	780,273	32	—	606	479	2
South Devon	50 1/2	1,609,071	35 1/2	—	1471	787	2
South Eastern	165 1/2	6,932,181	24 1/2	6 1/2	8368	10386	2
Taff Vale	38	820,056	120	5 1/2	1585	1607	2
Tulfer	36	684,584	52	4 1/2	749	771	2
Whitehaven Junction	12	147,095	7	4 1/2	167	284	2
York, Newcastle, & Berwick	242 1/2	4,466,526	32	9	12034	9362	2
York and North Midland	230 1/2	3,799,297	69	10	8181	6130	2

FOREIGN RAILWAYS.

Amiens and Boulogne.....	75 1/2	573,338	6 1/2	4	1142	—
Antwerp to Ghent (monthly).....	31	—	—	—	—	—
Marcellines to Avignon.....	71 1/2	—	8 1/2	—	997	—
Dutch Rhineish.....	57 1/2	—	—	—	1300	1627
Northern of France.....	211	2,000,000	4 1/2	4	11553	11508
Amiens to Boulogne (Central).....	70 1/2	—	—	—	—	—
Amiens to Tours.....	72	600,000	3 1/2	4	2554	3150
Amiens and Orleans.....	82	2,011,720	22 1/2	12 1/2	6928	8135
Amiens and Rouen.....	85	2,082,916	18 1/2	11 1/2	5757	8074
Amiens and Harre.....	89 1/2	—	7 1/2	5 1/2	3598	2981
Amiens and Eindhoven.....	98	—	15	6	7408	—
Amiens and Flanders..... (ditto)	—	—	—	—	878	—

is in error, inasmuch that he says—"Ever since it was determined to recommence working, you have invariably spoken of it in the highest terms." This we disclaim, and call upon our correspondent to cite any remark ever made in the Journal, which shall justify such remark. Our correspondent goes on to say, that "there is something very rotten in the state of Denmark," with respect to money. We perfectly agree with him in one sense, as applied to mine jobbers; but not as affects the mines or mine adventurers, and agents, where honesty is the course pursued. The remarks of our correspondent, whose letter dates from Manchester, are, generally speaking, so wide from the mark, that he must excuse us adding more, that while we admit our ignorance of the cotton trade, we cannot but conclude, he is somewhat innocent of that of metal.

It is with pleasure that we refer to the brief report of the proceedings of the LAMUEROO WHEAL MARIA MINING COMPANY, which appears in another column. It appears therefrom, that the adventurers have resolved on the adoption of a course which should have been pursued some 12 months since, but which may be explained by the features presented in the pecuniary world. Happily, such have, in a great degree, passed away; and without any renewal of confidence being necessary, in the present instance—the exchequer being in better order—the determination has been arrived at, so that the mine shall be fairly worked by prosecuting it in depth and sinking the engine-shaft 20 fms., which has been, for the past 10 or 12 months, abandoned, and also putting down the eastern or DAVEY'S shaft, and extending the levels, so as to take the several lodes at a greater depth. To effect this, a call has been made of 3000*l.*; and we congratulate the adventurers on this bold determination—feeling satisfied that, with economy and active management, they will be well repaid for their adventure, and the confidence manifested in their proceeding.

The completion of the Swansea Docks—now, we believe, in course of as rapid construction as the nature of such works will admit—is looked forward to by our brethren in South Australia with considerable interest and anxiety, as opening a channel for the direct consignment of their ores to the immediate neighbourhood of the smelting depôts, instead of shipping them to London, from whence they have to be transferred in smaller vessels to Swansea. The great distance of South Australia, and the consequent necessity of transmitting ore to England, renders it of the utmost importance that they should at once proceed to their destination; and, on the completion of these docks, which will be capable of receiving vessels of the largest tonnage, it is probable that so great an increase will take place in the Swansea trade, both import and export, as to secure to Australian vessels a sufficiency of back freight, without compelling the necessity of going either to London or Liverpool for the purpose. The South Wales Railway will open up a complete communication between Swansea and the great coal and iron districts of Wales, and the manufacturing localities of the kingdom—the produce of which for exportation will thus find a convenient outlet, with every accommodation which modern improvements can secure for speedy and safe shipment. This direct consignment to Swansea will effect a great saving in time, often to the extent of a month or more, in the voyage out and home—a circumstance of very considerable importance to the parties interested, both here and in our Australasian colonies. In making these few observations, we do not lose sight of the probability that, at a future period, the copper ores of South Australia may be smelted on the spot; but until such is the case, and British capital can be obtained in sufficient abundance to erect works on a large scale, either for an extensive manufacture of charcoal, or the working of coal seams, should such be discovered, in connection with blast-furnaces, it is a question of the greatest importance to the proprietors of mines as to the choice of an English port, from whence the most direct and rapid communication between the two countries can be effected.

The development of our coal measures may be considered as of national importance, adding to the wealth acquired from the mineral resources of the country, and, at the same time, affording employment in those districts where it may be said to be most required. Among the many schemes brought forward, or companies formed, during the past few years, that of CAMERON'S STEAM-COAL COMPANY took a prominent position; and, judging from the progress it has made and its quiet course, would appear to be advancing to the attainment of the object put forward in the prospectus of the company, and which has been, in a great measure, borne out by the reports at the several meetings of shareholders held since its establishment. Having had an opportunity of acquiring information, on which every reliance may be placed, we readily avail ourselves of the same—so that, in submitting the results of our inquiries, we may be enabled not only to render information to the shareholders generally, but, as we hope, induce capitalists to direct their attention to the mineral products of this country, holding out as an example the advantages attendant upon mining or colliery operations, where the one or other is conducted with economy and good judgment, and where the parties to whom is confided the management are themselves largely interested in the benefits to be derived from the profitable working of the concern.

It would be futile to enter at any length on the peculiar features of the company—inasmuch that, we believe, the Act of Incorporation, under 7th and 8th Vic., c. 110, and that especially applying to the construction of the railway, under 9th and 10th Vic., c. 401, with the extent of property, some 1300 acres, or thereabouts, which are held under lease for 99 years, are generally known, as also the locality of the collieries and the several measures. At the present moment, we learn that the output of coal is from 500 to 600 tons per week, employing about 200 men, under the management of Mr. ATKINSON—the coal being in favour, and employed for several uses; the copper works of Messrs. SCHNEIDER and Co., at Loughor, taking some 1800 to 2000 tons a year—while it is in demand by the Atlantic steamers, and used by the South Wales line of railway, the Southampton Dock Company, and other public bodies, to various purposes—thus evidencing its general use and applicability.

The company have six vessels under their command, the aggregate of which may be estimated at 1000 tons, which are chiefly employed between Swansea and London, Southampton, Cork, Waterford, and other ports. Several vessels are also employed on the Cornish coast, two or three of which ordinarily load each week at the port of Swansea, in addition to others chartered, or freighted, by the respective parties.

A railway has been in part constructed, with the intention of forming a junction with the South Wales line of railway, which will require not more than one mile in length, whereby the coal can be rendered at Swansea by railway—a distance, by this course, of about 8 miles—the company reserving the right of making a distinct line, crossing the South Wales line, whereby the distance would be about the same, although the cost of transport would be reduced. It is intended, we are given to understand, to proceed at once with the formation of a branch line of railway about 2½ miles in length, to meet the Llanelli line, which will make the entire distance to that port about 5 miles, whereby a communication will at once be made, from whence vessels will be at once loaded for Ireland, and other points; and inasmuch that there is an increasing demand for culm in the Sister Isle, the object in view—that of facilitating the transport, whereby the cost is reduced—is apparent.

On the completion of the branch to meet the South Wales line, a ready communication will be made with the ports of Llanelli, Swansea, and Neath, at the same time that facilities will be afforded for supplying the towns on the line of railway. At the colliery, we learn that the stone drift, in course of driving, will be completed in a month or six weeks from the present time, which will unwind at least a tract of 250,000 tons of coal, which, assuming the output, or sale, to be 1250 tons per week, would cover four years; while, in the interim, a new shaft is proposed to be sunk, so as to command the three seams, or beds, now in course of working, and which will further intersect the Broad Oak Farm, which is from 5 to 6 feet thick—thus adding to the produce, or supply, obtainable from the working of the colliery—it being contemplated that the proposed

shaft will occupy 18 months in sinking. It may be observed, that the engine power and other appliances are equal to putting out 250 tons a day.

One of the most important points connected with the railway, we may observe, is that of the interposition of the Loughor Bridge, over which it becomes necessary to carry the line of rails. This, however, has, it appears, been surmounted; the magistracy of Carmarthen and Glamorgan having expressed their disposition to afford the necessary powers, upon being secured by the company from any cost or expense attendant thereon, which, we believe, has been readily conceded by the company. We shall at all times feel favoured by correspondents rendering us information with reference to any operations connected with mining or colliery matters, whereby we may, through our columns, give publicity thereto, and, at the same time, furnish intelligence of advancement made in our mineral districts.

In directing attention lately to the objects of the EASTERN ARCHIPELAGO COMPANY, we have dwelt principally upon the commercial advantages to be gained from the establishment of British settlements in Labuan and at Sarawak. This view of the subject is also ably treated in a pamphlet* which we reviewed on the 20th May in this Journal. We would take this opportunity of again recommending it to the perusal of our readers, as showing the great national advantages to be derived from a proper development of the resources of the rich islands in the Indian Archipelago. The writer also dwells particularly on the discovery of coal on the main land of Borneo, and in Labuan, and mentions the fact, "that in so many cases the commerce and prosperity of a country have been founded on its mineral riches." He enumerates Great Britain, Spain, India, Australia, and New Zealand, and very appropriately adds Borneo and Labuan; for although the latter are rich in other products, it appears by the prospectus of the above company, that "the working of the coal-mines will form an important feature in the operations of the company." We have already pointed out the numerous and important advantages which this discovery will afford, not only to the company itself, but also to the Peninsular and Oriental Steam Navigation Company, to her MAJESTY'S Government, and to the East India Company, &c. But we would now direct attention to the fact, that the islands in the Eastern Archipelago are "a region abounding in mineral wealth." We have the authority of Sir JAMES BROOKE for stating, that "it is not too much to say that, within the same given space, there are not to be found the same mineral and vegetable riches in any land in the world;" and he also states that "gold of a good quality certainly is to be found in large quantities." Antimony ore he describes as a staple commodity, which is to be procured in any quantity, and tin is said to be plentiful. Copper has been reported; but the iron ore which has yet been found is of inferior quality. Indeed, so strong are the indications of the mineral wealth of the country, as to justify us in recommending a minute survey by a man of science. We are sure that there are many qualified men in the mining world who could do much for themselves and for others by visiting that country. We are convinced that their time and trouble would be amply repaid.

In our columns of last week, we offered some brief observations on the rider, or clause, introduced by Mr. WYLD, on the third reading of the amended, or supplemental, bill affecting joint-stock companies, which, we did not hesitate to say, was destructive to the mining interests, as rendering the Cost-book System nugatory, by embracing companies formed for working mines and minerals, as being under the provisions, and liable to the terms, of the proposed Act. At the time of making those observations, we were rather governed in the expression of our opinions, from the terms of the letter of our correspondent, not having the bill before us—but which having since acquired, we purpose briefly reviewing; and, so far as is necessary, correcting any error into which we may inadvertently have fallen, although we believe, in the main, we shall be found to be right in the construction put on the clause in question. We are well aware that the question affords much opportunity for special pleading; and, like many clauses introduced into Acts of Parliament, may be read in two different ways. We will, however, endeavour to divest the subject of its intricacies so far as lies in our power, and leave to our readers to determine how far we are right in the conclusions at which we have arrived. The complaint made by our correspondent, and which we adopted, was, that a gentleman representing a mining district, and being naturally associated therewith and with the mining interest, should have introduced a clause on the third reading of the bill, which, in effect, was to subject mines to the tender mercies of the legal profession, who should contend as to the purpose and meaning of each of the 126 clauses of which this amended bill, exclusive of the riders, is composed; and although we have been assured by the hon. gentleman in person, and have also received a communication from Sir C. LEMON to the same effect—viz.: that the bill applies only to the winding-up of companies, whether formed for railway, mining, or any other purposes, and is not to be construed as interfering with any known principle, or system, which may be at present pursued, we cannot, although with due deference to those gentlemen, but express our doubts as to the effect which the passing of the measure would have on the Cost-book Principle, without some explanation being given in a definite form.

We will at once refer to the Act 7th and 8th Vic., c. 110, for the "Registration, Incorporation, and Regulation of Joint-Stock Companies," wherein, by clause 63, all mines worked on the Cost-book Principle, are exempted from the powers, or obligations, contained in the Act—the clause being in the following words: "Provided always, and be it enacted, that nothing in this Act contained, shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of whatever nature soever, on the principle commonly called the Cost-book Principle." Here we have a clear exemption; and the Cornish Members considered it their duty to protect the mining interests of the county, and in deference to whom the clause was inserted—thus clearly showing that the Act was inoperative in all cases where the Cost-book Principle was adopted. Now, then, let us refer to the present bill, which, in the preamble, recites, that its object is to "Amend the Acts for facilitating the winding-up of the affairs of Joint-Stock Companies unable to meet their pecuniary engagements, and also to facilitate the dissolution and winding-up of Joint-Stock Companies," referring more especially to an Act, 7th and 8th Vic., c. 3, and 8th and 9th Vic., c. 98—the object of which several Acts were for "facilitating the winding-up of the affairs of Joint-Stock Companies," but which were found to be ineffective—and hence the introduction of the present measure. The Act for the Registration and Regulation of Joint-Stock Companies (7th and 8th Vic., c. 110), we grant, is not immediately noticed in the preamble; but, as it is to be assumed no joint-stock company could exist without being subject to the provision of that Act—the several Acts having reference to Joint-Stock Companies, including the one more immediately under notice—such must be considered as forming a part and parcel of the whole; and hence the latest measure, or amended bill, must be taken as the authority—inasmuch that it may be found to interfere with, or abrogate any, provisions, or clauses, in those passed antecedent thereto. The rider introduced by Mr. WYLD is couched in the following terms:—"And be it enacted, that all associations, or companies, formed for working mines, or minerals, shall be liable to the operations of this Act." Now, it would appear clear to us, that this applies to the whole of the clauses in the Act sought for; and which, having for its object the amending of the several Acts which preceded it, as connected therewith, must necessarily include that of 7th and 8th Vic., c. 110, in which the clause is introduced, exempting companies, formed for working mines on the Cost-book Principle, from its provisions. It is then evident that the rider, proposed by Mr. WYLD, either renders that clause nugatory, or otherwise we have two provisions, which run counter to each other. In the one Act, mines are exempted; in that proposed, they are included, and subjected to all the provisions affecting Joint-Stock Companies. It may be said—and such, we believe, is the ground assumed by Sir C. LEMON, Mr. E. TURNER, Mr. WYLD, and others—that this amended Act is simply to facilitate the winding-up of companies who are unable to meet their pecuniary engagements. Granted such to be the case, what is the object of the Stannaries Courts? what the powers vested in, or the nature of, the office of the Vice-warden? how will the custom of the county, and the legislative Act, work together? These are simple questions; and we think may be solved very simply by

the construction we put upon the several measures being opposed, and in contradiction to each other.

We had written thus far ere we were favoured with the very business-like letter of Mr. WYLD, which will be found in our columns; and without retracting any expression made in the preceding remarks, we will venture to reply to the letter in question, feeling well assured that, if either the hon. Member, or ourselves, are in error, that one and the other will readily acquit the party in the wrong, from any idea of doing ought than upholding the mining interest legitimately, with or without the aid of the Legislature, although we may have taken different views of the subject.

It is only right, in justice to ourselves, as well as to our honourable correspondent, we should in the onset admit, that at the time of writing the article, which appeared in our last Number, we had not seen a copy of the bill; and we must needs advance the real cause, so as to justify ourselves in having offered an opinion on a subject with which we might have become better acquainted, had we, as observed by Mr. WYLD, obtained a copy of the bill. That gentleman has kindly put forward an apology, by assuming that our correspondent's letter arrived at so late a period, that we had not time to consult the bill. We thank him kindly for the suggestion; but the fact was, on sending to the QUEEN'S printing office for a copy of the bill, the error was committed, of designating it the Act. The result may be well conceived, the answer being, "the Act" had not passed; and hence the absence of the copy of the "bill," but of which we have, by the courtesy of Mr. WYLD, become possessed. Thus far, by way of explanation, and endeavouring to clear our way as we go. We now approach the "facts," as presented by our correspondent (the hon. Member). He says, the 7th and 8th Vic., c. 110, is intitled "An Act for the Registration, Incorporation, and Regulation of Joint-Stock Companies;" and clause 64 (an error of ours, adopted by the hon. Member, for we find it to be clause 63,) exempts all mines, worked upon the Cost-book System, from the operation of the Act. We are then told by the hon. Member, that an Act was subsequently passed, the 8th of Vic., c. 3, intitled, "An Act for the Winding-up of the Affairs of Joint-Stock Companies unable to meet their Pecuniary Engagements," but which was not found efficient in its working; and, consequently, that another bill was introduced by Mr. MILNER GIBSON in July, 1847, to amend such Act. The dissolution of Parliament, however, prevented its completion; and in the present session "a more complete and detailed measure," with such object, was introduced by that gentleman, into which bill the clause complained of was introduced; and we here again repeat the clause, and have to direct the especial attention of all adventurers in mines, not only to the construction to be put upon the clause itself, but to the meaning to be attached to one particular word, which is placed in Roman capitals, or distinguished as marked by our correspondent. The words are these—that "all associations, or companies, FORMED for working mines, or minerals, shall be liable to the operations of this Act."

We again ask—what is to be understood from the introduction of this clause, and its thus forming one of the component parts of the bill? It is something or nothing—if the former, it is destructive of the 63d clause in the Joint-Stock Companies' Act; if the latter, then it is mere verbiage, or a peg on which the lawyers may take advantage to hang special pleas.

We will, however, proceed with our correspondent's remarks. We are told, that the clause was not smuggled into the bill, as our remarks would imply, but that notice of the motion was printed, at least, a fortnight antecedent to the reading of the bill; and we have, moreover, the verbal assurance of Mr. WYLD, that his intentions were well known to the Cornish Members, who raised no objection, but, on the contrary, considered the clause as calculated to be of benefit to the mining interests rather than otherwise. We are sorry that we should differ with the gentlemen referred to—but having our own notions on the subject, and being fully sensible of the errors into which the "collective wisdom" occasionally fall, we must still adhere to the opinion we have expressed, without even admitting the application of the lines of Hudibras. We are bound, upon the representation made by Mr. WYLD, to admit that the regular legislative notice was given; and we take blame to ourselves that we did not carefully peruse the notice of motions which appeared in the papers of the day. We now arrive at a point which, we think, requires some little explanation. Mr. WYLD tells us—"I had several conversations with Mr. MILNER GIBSON, who has charge of the bill, upon this subject; and, in the first instance, he thought, that all mining companies would come under the operation of his bill, and stated to me that such was his intention; but, subsequently, Mr. MILNER GIBSON and the law officers of the Crown thought it well that this clause should be inserted." We have here then an avowal, on the part of Mr. WYLD, that the honourable Member who introduced the bill was not competent to form a judgment, as to the effect likely to be produced by it so far as its extent, although, as a legislator, he was proposing a measure, having reference to one or more acts passed, with which it is presumed that Members of the Legislature are cognizant; inasmuch, that we are all bound to know the provisions of an Act of Parliament whether capable of reading, or otherwise; of which our correspondent states, the honourable Member was in a blissful state of ignorance, and which was acknowledged by the "law officers of the Crown."

Mr. WYLD, however, kindly steps forward to afford assistance to his friend, Mr. MILNER GIBSON, and says—"As you do not include mining companies in your amended Act, allow me to introduce a clause which shall make them a part and parcel of this joint-stock winding-up measure." Thus Mr. WYLD introduces a clause which makes "associations, or companies, formed for works, mines, or minerals," liable to the operations of the Act, from which, had he been quiet, according to his own admission, they would have been exempt. If this be the way of serving the miner and the mine adventurer, who have quite enough to contend with, in the absence of any further Act of the Legislature, we can only say, that the hon. Member, according to our notions, takes a somewhat curious mode of protecting, or promoting, the interests of the mining community.

We now approach another subject, treated upon by our able correspondent, and with whose opinions we may be said generally to concur, while it is necessary that we should say a word or two on the points raised. After admitting the value to be attached to the 63d clause of the Joint-Stock Companies' Act, which exempts mining companies from its operation, he observes—"The bill which has just passed the House of Commons is for the winding-up of bankrupt and insolvent companies, and will neither bring mines, properly worked upon the Cost-book System, under the control of the Joint-Stock Companies' Act, nor will it in the slightest degree affect their management." It is here that we alone differ, while we give to our honourable correspondent all that is fairly due, and to which he has a fair claim, in advancing his proposition or argument. He says, most properly, the Act can have no effect on any mine properly worked upon the Cost-book System; most certainly not, as, in such case, debts would never be contracted—liabilities would not arise—the necessary funds would be provided for the cost of working at the meeting of adventurers, held every alternate month, and hence the Act would not be called in force.

If we assume such to be the case, then we would ask, what the utility, or the object, of the clause introduced by the hon. gentleman—in fact, if the mines be properly worked under the Cost-book System, the Act can never come in force; while we contend that, by the introduction of the clause, it does involve mining operations with the Acts previously passed; and, as we have before observed, renders the exemption clause nugatory—however, we are neither legislators nor lawyers, and may be wrong in our conclusions—at the same time that, when a doubt can exist, it is, at all times, better that the point should be raised, and the question at once determined, ere it be too late to recall. The next paragraph is one to which we would call particular attention. Mr. WYLD observes—"Instead of inflicting an injury upon legitimate mining operations, it will clear the country of many insolvent schemers, which are falsely said to be managed upon the Cost-book System." With this opinion we cordially concur, for it is the abuses of the Cost-book System, or rather the misapplication of the term, which is most destructive to the mining interests.

We have not space to dwell on the subject at the moment, which requires the considerate attention of all engaged in mining adventures; and having our own views on the subject, which we believe to be perfectly in unison with those of Mr. WYLD, we reserve, until next week, any observations on this important question, as also on a matter to which we consider that gentleman attaches some importance, and which has not been lost sight of by us—that of the word FORMED, which is found in the 63d clause of the Act referred to.

We must needs defer, until next week, entering upon the subject of the adoption of the Cost-book System in localities where the principles are perfectly unknown, and in no way recognised; and where, moreover, as is very properly observed, the Stannaries' Court has no power or control. This will form subject for another article, which we will endeavour to meet the other points mooted—having, for the moment, seized upon those which appeared most prominent as affecting the bill in question.

LIABILITY OF PARTNERSHIP.

A case of very considerable importance to proprietors in joint-stock companies was decided, on Friday last, in a northern district court. It was that of a Mr. Thomas Metcalf, a shareholder in the North of England Joint-Stock Banking Company, which stopped payment in March, 1847. It is not necessary to go into all the technicalities of the law relating to these matters, but it behoves the public to understand that Mr. Metcalf, who was sued by a depositor to the amount of 1607*l.* in the bank in question, was singled out as the victim of the party suing, and that, after much judicial dubitation, a fiat was allowed to issue against him. Mr. Metcalf had carried on the business of a grocer at North Shields, and was in all probability prevailed upon, on the establishment of the said bank, to become a proprietor, under the assurance that it would not only be a profitable, but a most secure, speculation. It is true that he had made an assignment of his effects for the benefit of his creditors—but, as we understand the case, the party going for the fiat might have had an equally eligible ground of proceeding against any other shareholder in the company. The learned commissioner who adjudicated in the matter, felt that a consideration of the authorities consulted considerably strengthened his own first impression, that it was not the intention of the Legislature to give more than one remedy to the creditors of a joint-stock bank; and that, therefore, but for the *ex-parte* case of Wood, he should have had great difficulty in coming to the decision, that a fiat could be taken out by a creditor of a joint-stock bank against an individual member for the debt of the company.

It had been contended in the present case, that the right to take out a fiat followed from liability as a partner, and that the statute right of a creditor to issue a fiat against one or more members of a firm for a joint debt under the 16th section of the 6th George IV., c. 16, must prevail in the present case, and could not be taken away save by express enactment; that it was not affected by the provision of one prescribed mode of suing for the debt of a banking partnership; and that, although there were differences between such a partnership and an ordinary partnership, a joint-stock bank must still be a firm within the meaning of the 6th George IV., c. 16. His Honour said, he had already stated that but for the case of *ex-parte* Wood he should have had great difficulty in acceding to that view; he, however, felt bound by the authority of that case, provided the member against whom a fiat was issued was a member during the whole time of the existence of the debt. That was proved to have been the case in the present instance, and, therefore, he felt bound to proceed to adjudication under this fiat. Thomas Metcalf was adjudged bankrupt accordingly.

The case of Mr. Metcalf appears to be somewhat different from that of the shareholders generally of joint-stock companies. Meetings of the customers, or creditors, of the North of England Bank were called by the directors, in order to obtain their assent, that the sum which stood at the credit of their several accounts should remain as loans in the hands of the directors for the purpose of enabling them to wind up the affairs of the concern. The petitioner for the fiat agreed, amongst other persons, to such an arrangement, and accepted the promissory note of two of the directors for 1607*l.*, payable to himself, or order, at two years after date, and signed by the makers on behalf of the banking company. The transaction was, upon the authority of the important case of *Anderson v. the Bank of England*, declared by the court to constitute a borrowing, or taking up of money, on behalf of the bank. It might, his Honour said, at first sight, appear capable of argument, that the petitioning creditor had accepted the security of two of the directors instead of that of the whole of the members, who were bound to him before taking the note, but that there was no reason to presume that such a contract had been entered into; and that, if the note which he received had been affected by any such invalidity as would avoid the liability of the company upon it, the case would at most be this—that the petitioning creditor had accepted a void security, and that the validity of the debt for money lent to the company before the suspension would not be affected by it. Upon this point, therefore, he declared his judgment to be, that the petitioner was, at the time of the fiat, a creditor of the banking company for the sum specified in the note.

EMIGRATION TO SOUTH AUSTRALIA.

The want of labour, and the superabundance of the most nourishing food in South Australia, as compared with the absolute starvation and excessive population existing in numerous districts, both in England, and more particularly Ireland, is a subject on which ourselves, and the whole press of the empire, have constantly enlarged. It is a subject of such vital importance, at the present moment, when a tempestuous spirit is abroad, anxious for some change from which the discontented and unemployed hope to better their position, that it cannot be too closely pressed home on the attention of Government. The possession by Britain, at such a time as the present, of a territory at our antipodes as large as Europe, producing everything necessary for the necessities, the comforts, and the luxuries of civilised life, where millions might be located, appearing only as a "drop in a bucket," and where their presence would be felt only for good, appears a divine coincidence to enable us to secure an asylum for our starving thousands, and, at the same time, extend our commerce, enliven our trade and manufactures, and place us in such a position, that no man willing to labour with fair remuneration need be idle. The only question which naturally arises is, "How is free emigration, on a large scale, to be carried out?"—and this is answered in a pamphlet from the pen of Mr. Waghorn, the celebrated overland traveller, and just published by G. Mann, Cornhill, and Ridgway, Piccadilly. In this he recommends—"Emigration upon the widest and broadest scale, for the future prosperity of that happy land to which we belong, and thereby help to realise the dispensations of an Almighty Providence, through whom has been discovered a fifth portion of the globe, where every plant under the sun may be grown in its native fruitfulness; for every one is indigenous to Australia. If this be done at all, to compass its ends, it must be done on the scale of liberality; yes, and genuine liberality; and to begin it, I should have Parliament to vote immediately 20,000,000*l.*, to be appropriated and accounted for by a board of emigration to be established for the purpose. This was the exact sum that my Lord John Russell succeeded in getting from the then Government, for the emancipation of slavery throughout the British West India colonies, &c.; and, therefore, I have fixed that amount towards the amelioration of Ireland, for sending the Irish to the colony of Australia, and then sheep's carcasses will not be thrown upon the dunghills of that country, as often described in the public press."

Lieut. Waghorn then recommends the following plan for free emigration, on a liberal scale:—"At Plymouth, at Portsmouth, at Chatham, and at Sheerness, are ships of war lying idle, most of them have all their masts, sails, and cordage ready in the stores at these ports. I would commission every one of them that could be spared from the naval service, and with drafts of six helmsmen, being gunners from her Majesty's ship *Excellent*, at Portsmouth, invite stout Irishmen to man them (each ship's crew, say six men to every 100 tons), and I would send them to the Cove of Cork to receive emigrants from that spot, for the purpose of being located, at the Government expense, in Australia."

Assuming that 20*l.* would be sufficient for each adult, half a million of Irish might be located, and with half the proposed grant, or 10,000,000*l.* The Australian wool trade has increased from a single bale of 250 lbs., a few years since, to 21,000,000 lbs. in 1847; and, if labour be adequately supplied, will, in ten years, amount to 100,000,000 lbs.

Ireland has 800 persons, England 260, to each square mile; Australia has 12 square miles to each individual. Australia has nearly the area of Europe, with the population of Northumberland. In this country the people press on the sources of subsistence; in Australia the food presses upon the people. Ireland has 3,000,000 dependent on charity for subsistence; New South Wales has subsistence for 3,000,000, with only 180,000 persons to consume it. There they are languishing to obtain that which we are anxious to get rid of. Each groans under the burden, while disputing the right to bear it; each prefers suffering from the disease to paying the fee for the cure. Here there are districts where the land, rent free, would not afford 1*lb.* of meat a-week to each starving inhabitant. In the Legislative Assembly of New South Wales, in the month of June last, it was stated, that this year "no less than 64,000,000 lbs. of meat would be wasted, sufficient to feed 1,100,000 of those poor people who were starving in England and Ireland." In New South Wales, the people are 180,000, the cattle 2,000,000, the sheep 8,000,000, being about 13 head of oxen and 50 sheep for each person. The superabundance of food is wasted for want of mouths, the corn is shed for lack of reapers, the wool is injured for want of shearers, and, consequently, all descriptions of produce either perish or are greatly depreciated, both in quality and value. Herds of cattle and flocks of sheep are "boiled down" for tallow there, while thousands are famishing for want of food here; the meat is wasting, here men are wasting. Human skeletons pine here for what fattened dogs reject there. The balance between food and population is unequal at home; it is as unequal in New South Wales, but it is the other way. In like manner, the scales of labour and employment are uneven here; they are as uneven at the antipodes, but in the opposite direction: here labour is too plentiful, there it is as much too scarce. We have tried and failed to bring the food to the starving man—therefore, convey the starving man to his food, the labourer to his hire, and you may restore the lost balance. In Ireland, a scanty meal, at 2*d.* or 2½*d.* per day, was doled out to sustain life; in New South Wales, the unskilled labourer, full fed with ample rations, supplied with a dwelling and garden, found in tea, sugar, milk, and tobacco, disdains to work, under 2*s.* 6*d.* a-day besides. If destitution causes here, affluence leads to the same result there. Want here and abundance there, scarcity and superfluity of labour—opposite extremes—and alike in vice, indolence, insubordination, and social disorder."

Such is the spirit of Mr. Waghorn's plan and remarks, in which we most cordially concur; and, by such a system, carried out with spirit and liberality, and certain regulations for repayment, it is highly probable that, in from 10 to 20 years, the whole amount would be refunded.

DISS AND HAUGHLEY RAILWAY.—The works continue rapidly to progress between Haughley and Bacton, and there is no doubt but that part of the line will be opened for goods and traffic in a few days. An engine is already at the station. At Thrandisone bog the works are also in active operation, and the worst part of the bog is overcome. At Diss the arches are being erected over the River Waveney; and, it is expected, will soon be completed.—*Bury and Norwich Post.*

IMPROVED COMPRESSED-AIR LOCOMOTIVE.

The Baron Von Rathen, whom the readers of this Journal will remember is a veteran supporter of the doctrine of the utility of compressed air as a source of power, recently obtained a patent under the title of "Improvements in Obtaining and Applying Motive-Power," for further improvements on his plan. In order to demonstrate the truth of this invention, an engine, adapted as a common road locomotive carriage, is building at the College of Civil Engineers, Putney, which, we are informed by a friend who has visited that institution, appears to give a favourable idea of these improvements, and will shortly be ready to perform an experimental trip, from which favourable results may be anticipated, if it be possible to form a judgment from the experiments hitherto made, which have been eminently satisfactory. In the meantime, at the request of the inventor, we give the following communication, substantially as received from him, particularising the peculiar character of his invention:—These improvements refer to the compression of air, and to the expansion and regulation of it, when used as a propelling power. The inventions combined in the specification consist in a new description of hydraulic pump, the water in which is used as a medium for compressing and cooling air, with a cooling or condensing apparatus to condense compressed air, as also steam. The capacities of these pumps are varied in a geometrical ratio, and are fixed to axles, connected together in such manner, that each piston is continually in a different elevation of the stroke—the whole forming collectively an arithmetical scale of the stroke, divided into as many parts as there are pumps and cranks applied—as 3, 6, 9, &c. By these means the injurious inequality of power, in compressing air from 1 to 50, or even 100 atmospheres, and the immense loss of power, which hitherto made the application of compressed air as a propelling power impracticable, is now entirely removed. Another loss of power—that produced by the development of heat in compressing air—is provided against by extensive refrigeration, when expanding air from a high degree of compression—say 50 atmospheres—down to a uniform working power of 5 atmospheres; and it is believed that this obstacle, more than any other, has contributed to create an almost general prejudice in the minds of the public, that this safe and beautiful power (compressed air) cannot be usefully employed as a propelling power. The method by which the inventor proposes to restore the heat, is by bringing the compressed air, in the act of its gradual expansion in small films, in contact with the atmospheric air, by the operation of a self-regulator, which allows it to enter in small films between two copper pipes, upon the internal and external area of which the atmospheric air is in free contact. The degree of working pressure is, by an ingenious contrivance, regulated so as to be uniform, but is susceptible of being increased, or diminished, if required. Upon serious examination of this invention, as set forth in the specification of the patent, it will be found too extensive to be fully detailed in the columns of the *Mining Journal*; but sufficient has been given to show that precautions have been taken for the avoidance of the loss of power in compressing and expanding air, which has hitherto excluded compressed air from being usefully applied as a propelling power—a power otherwise offering such great advantages, as regards safety and comfort. The question, whether atmospheric power will be cheaper than that now in use, the inventor states, can only be practically resolved, by adopting it on a large scale, in regular traffic, upon a railway—for it must be allowed, that locomotion by compressed air is like the power-loom, which is more economical than the hand-loom, only when worked together in large numbers. Thus, steam is cheaper, if it be required to work one locomotive only; whilst compressed air (according to Baron Von Rathen) will save 50 per cent., when applied to a line working 10 or 20 locomotives.

PROGRESS OF THE ATMOSPHERIC RAILWAY SYSTEM.

Notwithstanding the utter failure of this principle of transit on the Croydon line, and the difficulties and delays continually encountered on the South Devon Railway, from the total inefficiency of the longitudinal valve, as formed on Clegg and Samuda's system, several of the plans which we have often before noticed are being improved and matured, and others, of which we have before scarcely heard, are being brought before the public, evidencing that there is still a conviction in the minds of many scientific and inventive men, that the time will arrive when the costly and ponderous locomotive must give way to this economical, safe, punctual, and, in every way, far superior principle. We are led to these remarks from having, during the past week, inspected a working model of an atmospheric line, patented by Messrs. HARTZOW and YOUNG, of Bermondsey, which possesses a freedom of action in the valve, and a security from its leakage, far superior to that at present in use. The model in question consists of a 4-in. tube, 150 feet long, with a gradient at each end of 1 in 100, and a turn-table at each extremity, giving the means of starting from each end alternately on the vacuum being obtained, and thus doing away with the necessity and trouble of pushing the carriage every time to the starting point of the tube. The tube is cast with a longitudinal opening, similar to Clegg's; but, instead of a flap valve, the action is precisely similar to the slide valve of a steam-engine. The sides of the opening are so cast, that one side presents a horizontal groove, and the other a tabular face, both planed perfectly true; on this tabular face the slide valve rests, when forced out of the groove by the passage of the coupler, consisting of bars of iron, in a full size working tube, proposed to be 4 or 5 ft. in length; at each end of these bars a semicircular opening is turned through about half their thickness, forming, when two abut against each other, a circular slot, in which is placed a disc of iron, ground perfectly true with the under surface of the bars, and thus presenting a sort of rule joint without any fixed axis, and forming collectively a loose chain which slides over the opening, and renders it perfectly air-tight. To each of these bars, or links, is placed a steel spring, in the shape of a carriage spring—consisting, however, of only one plate, and merely of sufficient power to press the valve into its place, after the passage of the coupler; the whole is covered by a top plate, to keep out grit, wet, snow, &c., with the exception of a small space to allow the coupler to pass, which is not much thicker than a saw blade, and which connects the leading carriage with the piston, in the usual manner.

It will be seen, by this description, that the entire apparatus is formed of metal, requires the presence of no destructible material—such as leather, &c.—and only sufficient lubrication to ease the friction in the sliding motion, and prevent the heating of the coupler in its passage along the edges of the tube and valve. The construction of this railway tube is certainly void of any complexity, and the model works with great facility and correctness; there appears to be no lateral or transverse oscillation in the carriage, which is capable of carrying six persons; and considering that it had not been in work for some weeks, exposed to the dust and weather, and the tramping over by the many persons employed in the extensive glue manufactory where it is laid down, it worked surprisingly easy and perfect. It has been inspected by many scientific men and eminent engineers, who have expressed their approbation, considering it based on sound mechanical principles, and that the more it is worked the closer the faces of the valve and tube will wear, and, consequently, so much more perfect will the vacuum become.

TATTERSALL'S PATENT RAILWAY SIGNAL—GUARD AND DRIVER.

Numerous have been the means suggested for enabling the guard of a railway train to make an instantaneous and effective signal, to call the attention of the engineer, amidst the rattling din of the engine, in case of an accident—such as the breaking of an axle, a carriage running off the rails, or other casualty, rendering it necessary to stop. To the great majority of these there have been insurmountable objections, while the one under notice, from its simplicity, inexpensiveness, and efficiency, is deserving the consideration of every railway company in the kingdom. There have been several proposals for a line along the roofs of the carriages, but with no really efficient means of providing for the variations in the length of train, and the sudden stretching out and reclosing of the carriages from the spring of the buffers; in this case this is ingeniously provided for. The apparatus consists of a box about the size of a carriage lamp, in which is a barrel spring, with the cord wound round it; to whatever length the cord is drawn out, the spring, which is wound up by drawing out the cord, takes it back by its own power—the object being to take up the slack, and keep the line tight. It is carried along the several carriages of a train through open rings, fixed to the roofs; and the other end is attached to a lever, which opens a communication between the boiler and steam-whistle; or a powerful alarm is fixed on the engine, acted on by a lever in the usual manner. The open rings allow of the chords being detached from, or attached to, any one or more carriages, without withdrawing the cord from end to end. A few sockets and rings, with a winding apparatus, will fit up a train; so that the cost to railway companies is very trifling indeed. This signal is in daily use on the Eastern Union Railway, and has given great satisfaction to the engineers and public.

BURNING OF THE NEWPORT RAILWAY BRIDGE.

In our last Number, we inserted an account of the total destruction of the timber bridge for the South Wales Railway at Newport, as taken from the *Sun*, in which it was stated, that the timber being highly Kyanised, or pickled, had rendered it so inflammable, that it caught like gunpowder. Now, the fact is, that timber, prepared with Kyan's process—corrosive sublimate, Sir Wm. Burnett's chloride of zinc, Margery's sulphate of copper, or Payne's muriate of lime and sulphates of iron—is much less capable of igniting than wood in its natural state; and one of them (Payne's) renders wood, cordage, hemp, sail cloth, and woollen, cotton, or linen fabrics of every description, absolutely incombustible. The process by which the timber for the Newport Bridge was prepared is Bethell's, which is a preparation of creosote, or wood tar. The company under whom Payne's process is being worked, have, through the experiments of that gentleman, secured by patent, in addition to the original process, several very important improvements, by which the commonest woods are rendered exceedingly hard and durable, and of the most beautiful texture and curl for ornamental use, taking a beautiful polish. Under those processes where a single soluble salt is employed, no great advantage is said to arise; but in Mr. Payne's process two soluble salts are injected into the pores of the wood, the air having been previously extracted—muriate of lime and sulphate of iron—when a double decomposition and recombination takes place, producing muriate of iron and sulphate of lime, the latter insoluble. In addition to this, a saturated solution of alum is injected, and decomposed by lime, which renders the wood totally incombustible. We have seen a piece of deal so prepared, held five or six minutes against a horizontal jet of ignited gas, and, when taken away, not even a spark was visible. Under the patents, the company have secured the employment, by double decomposition, of the various salts produced by the several metals, alkalies, and sulphur. Timber, thus prepared, is impervious to dry rot, resists the attacks of the *teredo navalis*, and hence its great advantage in shipbuilding; it would also render buildings fire-proof. On Friday, the 23d inst., two model houses are to be erected, with timber prepared by Payne's process, when they will be filled with shavings, common wood, and other combustibles, which will be set fire to, as a test of the efficiency of the patents. We shall report the results of the experiments.

EXPORTATIONS OF THE PRECIOUS METALS IN MAY.—If anything were wanting more forcibly to prove the healthy state of the money market, and the facility which now exists in the City, in obtaining cash, it is the extensive exportations of the precious metals to the continent during the past month, which have exceeded those of any former one; but while there is this vast traffic carried on by our bullionists and bankers in this rich produce of mining industry, the importations of bullion and specie from the United States of America, Mexico, Brazil, the West India, India, and other distant parts of the globe—far surpassing those of late years—only prove that the commerce of Great Britain is gradually on the increase, and the confidence in the stability of this country, notwithstanding the recent political events which now affect nearly every other part of Europe. The following is from the official returns; but large sums have been exported, which do not exactly come under the cognisance of the Custom-House. It will be seen, that silver is the metal chiefly required for the continent, as the greater portion of the gold is obtained from the mines of Russia and Austria at a lower price than in England. To Rotterdam—silver coin, 160,550 ozs.; ditto silver bars, 451,700 ozs.; ditto gold coin, 11,773 ozs. To Hamburg—silver coin, 105,840 ozs.; ditto silver bars, 198,820 ozs.; ditto gold coin, 8696 ozs. To Belgium—silver coin, 15,880 ozs.; silver bars, 193,725 ozs.; ditto gold coin, 4201 ozs.; ditto to Harlingen, 880*l.* To Havre—silver coin, 5360 ozs.; ditto bars, 5400 ozs.; ditto gold coin, 2635 ozs.; and 230 ozs. of gold dust (a new article of exportation). Boulogne—silver coin, 140,000 ozs.; ditto bars, 140,000 ozs.; gold coin, 575 ozs. Calais—silver coin, 8000 ozs.; ditto silver bars, 70 ozs.; ditto gold coin, 550 ozs.; and platinum, 4366 ozs. (a novel importation). Mauritius, 4364 ozs. gold coin, and 6400*l.* The amount of specie and bullion in gold and silver in the coffers of the Bank of England is greatly increasing, and may be now put down at 16,000,000*l.*, which enables the directors to afford every assistance to those requiring cash at a moderate interest.

MINING IN BELGIUM.—The accounts from Liege, and other mining districts, continue to be very unsatisfactory. In the coal mines of Mons, &c., not one-half of the regular hands are at work, whilst the greater portion of the furnaces are at a very low blast, merely sufficient to meet the actual demands. Notwithstanding the present crisis in mining operations—which is to be accounted for by the depression in railway undertakings, and the scarcity of money, as well as confidence—there have been recently some large importations of steel and cast-iron from England, for special purposes, admitted under the regulations of the decree passed in the Chambers, in April last, admitting British machinery and utensils, tools or implements, if for the improvement of any establishment, free of duty. The iron of Belgium, although far superior to that of France, is very inferior to British in the manufacture of machinery—the same may also be said of the steel, as they have not got it to the same temper, and, consequently, when an improvement in the present state of monetary affairs does take place, no doubt the English ironmasters and machinists will feel the beneficial effects of the new tariff.

FRANCE.—Although, as we stated last week, the decrease in the returns for April of coal and iron was large, it was less than first expected; in May, however, there was a very great improvement in both, and during the present month it is expected to be much better. Some large contracts have been concluded, and the international commerce between the two countries, it is hoped, will soon be restored to its former state. The accounts from St. Dizier, and the iron and forge districts, as well as the colliery basins, are far from encouraging to mining operations; there have, however, been a few small contracts concluded at St. Dizier for wrought-iron, but at a lower price than the last quotations. English iron is in demand. The proposed alteration in the tariff is looked forward to with the greatest interest by the monopolist ironmasters and the colliery companies of the Loire, &c.

MINING IN MEXICO.—The Mexican Government has not yet ratified the treaty with the Americans, and some doubt exists whether negotiations will not be resumed, as a great opposition prevails on the part of the former to the annexation of the fine mining districts from Mexico to the United States, whose occupation of that portion of the Republic is looked upon with great distrust; as, if once they have possession of that territory, they may find out an excuse to make further invasion, and ultimately strive to get the whole of Mexico. In the meantime, several American companies, for working the mines of New Mexico, have been, or are, forming; and the country is being explored, by various engineers, as to its mineral resources, but, at the same time, in a military point of view, to see how far the United States can carry out the projects she has for joining the Atlantic and the Pacific. The next arrivals from that quarter are looked forward to with some interest by the mining companies in this country.

INDIAN MINERALS.—Lieut. Christopher, who has lately conducted steamers many hundred miles up the three great rivers of the Punjab—the Sutlej, Chenab, and Indus—has just returned to Bombay on leave, his latest expedition being that on the Indus to near Attock. He brings with him a large collection of notes of measurements, sections of the country, and drawings and specimens illustrative of his researches. Amongst the last of these are—1. Portions of coal, chiefly cannel coal, lignite, and jet (exactly like that of Whitby), and a heavy substance like the black-band iron ore of Lanarkshire.—2. Selinite, similar to that found in all our salt deserts, in thin plates divisible like mica.—3. Salt, in large cubes 2 or 3 in. each way, as transparent as crystal; salt in masses, corroded by the water, in stalactitic columns, and carved into elegant diables.

COAL FROM THE INDUS.—We have been favoured by a correspondent, to whom in such matters we are under the deepest obligations, with some specimens of coal from the Upper Indus, near Kalabagh. It differs very materially from most of what we have seen from seams in India. It retains its woody structure, but bears a very close resemblance to some of the least perfect specimens of jet from near Whitby, in Yorkshire. It is hard, heavy, and lustrous; breaks with an imperfect conchoidal fracture, seems to have considerable toughness, and might, we should imagine, be easily cut into ornaments and polished. Its remoteness from any place of consumption, and the extreme cheapness of fire-wood on the Indus, will, we should imagine, make it of little value as fuel, however abundant it may be on the banks of the river. It burns freely, and gives out a very large quantity of heat. Along with it specimens of iron pyrites, in which it abounds, have reached us. This mineral is common amongst most kind of coals, and greatly deteriorates their quality—it is of no sort of value by itself. It is often mistaken for a copper ore, to which externally it bears a strong resemblance.—*Bombay Times.*

NEW PATENTS.

H. Adcock, Moorgate-street, London, civil engineer, for certain improvements in furnaces and fire-places.
R. Barnes, of Wigan, Lancashire, gas engineer, for certain improved apparatus for manufacturing gas for illumination, part of which improvements are applicable to retorts for distilling pyroligneous acid, and other similar purposes.
J. P. Westhead, Manchester, manufacturing fur into fabrics. (Being a communication.)
B. Lathrop, Esq., King-street, Cheshire, for an improved wheel for railway purposes. (Being partly a communication.)
A. P. M. Darlin, gent., Paris, France, for improvements in obtaining motive power.
T. Dalton, Coventry, silk dyer, for improvements in the manufacture of fringes, gimps, and bullions.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Reek and Son, Hastings, Carriage wheel.
W. Southam, Nuneaton, Warwickshire, pneumatic floor dresser.
J. Eaton, Woodford, near Thrapston, Northamptonshire, tipping cart.
W. Benson, Kington, Nottinghamshire, a drain pipe.
E. F. Wollheim, Paris, comb-tooth cleaner.—*Mechanics Magazine.*

Original Correspondence.

IMPROVEMENTS IN SMELTING.

SIR,—I am, indeed, surprised at the astonishing indiscretion exhibited by Mr. Bankart, in the columns of your valuable Journal. His letter is emphatically a tissue of errors, which a very ordinary amount of thought, and of experimenting, would have prevented him committing to paper. It seems, although he has talked of experience, that it is necessary for me, albeit one of 18 years' experience in the science of chemistry, in the laboratory and the manufactory, to prove to him how grossly he has blundered, and of which the veriest tyro in the science would be ashamed. Mr. Bankart has said, that my patent "is a direct, though complicated, infringement" of his patent. Never was such a charge made on slighter grounds, as will be evident to your readers, by quoting Mr. Bankart's claim in his specification, which is, "the mixing of the different ores of copper and iron pyrites in due proportion, according to the quantity of sulphur, relatively with copper, which they respectively contain, and adjusting them in such manner as that those ores which hold sulphur in excess may compensate others which are wholly, or partially, deficient in sulphur, and in subjecting such mixture to a succession of roastings and lixivations (the residuum, after each roasting, having the proportion of copper to sulphur adjusted as before), and thereby obtaining a solution of sulphate of copper, whence the copper is obtained by precipitation in a refined metallic state"—while the principle of my invention is totally different, and is embraced in the following quotation: The claim is—"1. The roasting, or calcining, separately the ores of copper, and the ores of the metals herein specified, by placing these ores in an open vessel in a muffle kiln—so that the vapours from its contents shall escape freely with the vapours of combustion of the iron pyrites, and be condensed at the same time in the vitriol chamber.—2. I claim the disengaging, simultaneously from an open vessel in a muffle kiln, the deutoxide of nitrogen for the vitriol chamber, with that of oxidizing the said ores, by mixing with the said ores saltpetre, or cubic nitre.—3. I claim the supplying the vitriol chamber with steam, by using a solution of saltpetre, or of cubic nitre, with the said ores.—4. I claim the action of sulphuric acid upon the said ores, after they have been treated with saltpetre, or cubic nitre, and either before or after they have been freed from the sulphate, or arseniate, of potash or soda."

I may now add here, that I have the certificates of well-known chemists, gentlemen intimately acquainted with patents, who have declared that my invention is "perfectly novel," and one of whom adds, in these words, that it is "far more economical and eligible, in a practical point of view, than the process of smelting copper heretofore pursued." So much on the subject of novelty. As regards complexity, a simple statement will clearly show on which side that accusation ought to be affixed. Mr. Bankart recommends, for the extraction of copper from the oxides or carbonates of copper, the mixing them with iron pyrites, and to roast the mixture in a reverberatory furnace, and then to lixivate. Now, any novice in the science will pronounce, that this is truly a work of supererogation, it being an attempt, as it were, to gild refined gold; for nothing can be simpler, or more effective, than reducing the oxides or carbonates of copper with carbonaceous matter in a reducing furnace, as it is at present beginning to be practised in South Australia. I do not think, therefore, that this simple and well-known process of reduction can be improved upon, and it is only when these ores contain sulphurets, arsenurets, and arseniates, that I would recommend my process to be used.

Mr. Bankart does not seem to be aware of the fact, that the common ores of copper raised in Cornwall contain six times the quantity of sulphur necessary to form a sulphate of copper—consequently, not a particle of a sulphuret, under good management, need be added to these ores; such sulphuret being only required when the copper ore is very rich. Hence, as the average quantity of copper in the Cornish ores is 7½ per cent., and the sulphur at least 22½ per cent., his process can be but very seldom applied in Cornwall; as, unfortunately, hitherto the ores raised therein have contained but too much iron pyrites—the substance which, it will be recollected, Mr. Bankart, in his claim, adds to them; whereas the principle of my invention is the application of the iron pyrites to calcine the copper ores—not to mix with them.

Mr. Bankart has called in question the possibility of my precipitating, in an hour, 2 lbs. 5 ozs. (misquoted by him 2½ lbs.) of metallic copper per square foot of iron. I beg to inform him, that though this quantity may seem to him extraordinary (for it appears he cannot exceed 4 ozs. per hour), it is strictly correct. I am not vain enough, however, to suppose, that the quantity of 2 lbs. 5 ozs. of copper may not be exceeded by other chemists; but as this was the quantity I found, I have stated it—a comparative test having been made, to determine how much copper could be precipitated in an hour by a square foot of iron, from a solution at the boiling point, and how much from a solution of the same density, and containing the same quantity of copper at the temperature of 60° Fahr., the time being carefully observed by a watch. I am not without hopes, therefore, that even in the hands of Mr. Bankart, he will approach 2 lbs. 5 ozs. of copper per hour, if he will lay aside his cumbersome apparatus. If he cannot, then I have no objection to take a run down to the Cobre Wharf, on or before the meeting there (Swansea) of the British Association for the Advancement of Science.

According to the clear report of Mr. Phillips, respecting the experiments at the Cobre Wharf, the cost, exclusive of that of iron for precipitating, of a ton of copper precipitate amounts to 9l. 18s. 8d. Now, so widely different is my process from Mr. Bankart's, that, even estimating a ton of what is familiarly known as brown sulphuric acid, of specific gravity 1.750, to be sold in Cornwall at 3l., which acid in London fetches at least 6l. per ton, and including the cost of iron for precipitating a ton of copper, the whole expense for the reduction of a ton of copper from the ore into ingots will not cost a single pound; and, if the economy of my process were not greater, I should dread for the Cornish miner the competition of our countrymen in South Australia and North America; who, with British energy and almost inexhaustible lodes of the richest copper ores, will produce a keener competition than has been experienced from the foreign ores of Cuba and Chili; but I am happy to add, if the consumption of vitriol in Cornwall and Devon approach that of some of the other counties in Great Britain, the profits will be much more than 9l. 18s. 8d. per ton of copper—for, instead of requiring in the calcining the large quantity of 6 tons 4 cwt. of coal per ton of copper precipitate, my process absolutely does not require a particle of coal—iron pyrites (the attle or rubbish of the copper mines) being the fuel. I have often seen this combustible in a kiln in my experiments produce a heat not a great number of degrees under the intensity of that of a coke oven. In conclusion, I would give a hint to Mr. Bankart, before he assails another, as he has me, with groundless accusations, to reflect a little. At present, it would be difficult to say what he is; but certainly not what he is not—a chemist. W. BIRKMYRE.

June 6.

THE COPPER TRADE.

SIR,—In the *Mining Journal* of the 27th May, I notice a letter, signed "Constant Reader." I beg to make a very brief reply to some of his remarks and queries. If the smelters were to reduce the cost of smelting of copper very materially, they could, surely, afford to pay the miners a better price for their ores. This could be done if the disposition existed. I have suggested a very simple plan, and a valuable application of the refuse. I will in my turn put a query—If the smelters persist in rejecting improvements, by the adoption of which they could afford to give a better price for the raw material, what are the miners to do but become smelters themselves?—T. H. LEIGHTON: *Cwmamman*, June 1.

THE ATMOSPHERIC RAILWAY SYSTEM.

SIR,—Having for many years been an advocate for the atmospheric system of propulsion on railways, I have not failed to examine, with the utmost care and impartiality, the various models which have, from time to time, been exhibited. Among these, I, last summer, several times visited the full size working model, on the elastic tube principle, laid down by Messrs. Clarke and Varley, at Blackwall, which then appeared to me to work so well, and hold out such proofs of safety, economy, and speed, and the experiments were so well attended by scientific men, and gentlemen connected with railways, that I was in hopes, ere this, the system would have been adopted by some company, on a scale sufficient to fully test its merits, and its superiority over the locomotive engine. The interest on the subject, which I fancied was publicly gaining ground, appears again to droop; and may I be allowed, through your valuable columns, to ask, whether the parties connected with the elastic tube system, or any other plan, which may reasonably be expected to work well, have any negotiations pending with railway companies for a full and fair trial, by which it can be proved beyond a doubt, or otherwise, that the prin-

ciples of atmospheric propulsion are founded on a true mechanical basis, and that its adoption would bring about a most advantageous change in our railway system. I feel greatly interested on the subject, as I am convinced our longitudinal valve, however beautiful in its action, will never secure regularly in the running of the trains, and will entail upon us great expense, if it does not eventually involve the entire change of the principle on which our railway is now constructed.

Exeter, June 9.

A SOUTH DEVON SHAREHOLDER.

ON THE ANALYSIS OF CHROMIC IRON.

SIR,—This species is well known to be most difficult of decomposition by the processes generally employed, which consist in fusing it with a mixture of nitre and hydrate of potash, or an alkaline carbonate. In these, however finely the ore is pulverised, a portion almost invariably escapes decomposition. To obtain the mineral in a state of minute division, Fresenius recommends elutriation, and directs that, after fusion with nitre and carbonate of soda, the portion insoluble in water be digested with hydrochloric acid, and the amount of undecomposed ore be deducted from the original quantity.

This may serve for the analysis of pure homogeneous specimens; but the common varieties are generally, more or less, mixed with foreign substances, and often with silicates of alumina and magnesia, which are lighter than the ore; in the process of elutriation, consequently, the portion of finely-divided ore obtained, suspended in the water, will contain a larger proportion of the impurities than that which remains at the bottom of the vessel. Again, when the powder thus obtained is fused with an alkaline carbonate, the silicates are at once attached, while the portion which remains to be deducted, after the action of both alkalies and acid, is pure chromic iron. In this way a specimen of impure ore will give a per centage of oxide of chromium considerably below the truth.

While endeavouring to find some more eligible mode of treatment, it occurred to me, that the bisulphate of potash might be used with advantage, and in this I was not disappointed—for I found that, with certain precautions, the mineral might be completely decomposed by it. The chromic iron must first be very finely levigated (a gramme of the crushed ore will require 15 or 20 minutes trituration in an agate mortar); it is then to be mixed with 10 or 12 times its weight of fused bisulphate of potash, and the mixture heated to fusion in a platinum crucible, and preserved at a gentle red heat for about 30 minutes. The crucible and its contents, when cold, are placed in water, which, with the aid of heat, soon dissolves the saline mass. The greater part of the chromium is left as a green basic sulphate, insoluble in water or hydrochloric acid, and apparently identical with that obtained when any salts of chromium are heated with an excess of strong sulphuric acid.

I have found it the best mode of treating this mixture of soluble and insoluble salts, to boil the whole for a few minutes with an excess of carbonate of potash, or soda, which precipitates the alumina, iron, chromium, that may be in solution, and decomposes the insoluble sulphate; it is not easy, however, in this way to remove all the sulphuric acid, and thus render the residue quite soluble in hydrochloric acid; but this is of no importance. The dried precipitate is now to be treated after the process recommended by Fresenius, which consists in fusing it with five times its weight of a mixture of equal parts of nitre and carbonate of soda. The operation should be performed in a platinum, or, preferably, a silver crucible over a spirit lamp, and the mixture kept in fusion 10 or 15 minutes, to ensure the perfect solution of the chromium. The chromate of potash is then dissolved out from the mixture of oxide of iron, alumina, and magnesia, which may be separated in the ordinary manner: if the precautions above mentioned have been observed, no trace of undecomposed ore will be left after treating the mixture with hydrochloric acid. A small portion of magnesia remains, dissolved in the filtrate from the precipitate by carbonate of soda, and may be obtained by evaporating to dryness. Any silica which the mineral contained is also dissolved, and may be separated in the usual manner. The presence of a small portion of sulphates prevents the determination of the chromic acid by a salt of lead; we, accordingly, supersaturate the solution with hydrochloric acid, and boil with alcohol, to convert it into chloride of chromium, from which the oxide is to be precipitated, by adding ammonia in excess, and boiling for a few minutes. I have employed this method several times with perfect success; it is easy of execution, and, being free from any sources of error, yields very accurate results.—T. S. HUNT: *Montreal*, March 25.

NOVA SCOTIA IRON ORE.

SIR,—My attention has been directed to an article that appeared in your valuable *Journal* of 27th May, signed George Phillips, Old Broad-street, who states that "he is the centre of a considerable circle of intended shareholders in the Londonderry Mining Company of Nova Scotia, who are capable of appreciating the richness of the ore, and the value of the property." Yet he would keep aloof until his mind was satisfied of certain fantasies, conjured up by his own imagination, in respect to Mr. Musket's connection with the Nova Scotia Mining Company, and the reward that should be the due of the individual who had discovered the method of making cast-steel by simple fusion from the ore, whether Mr. Radley, Mr. Musket, or Sir T. Lethbridge.

What connection these important matters, in the opinion of Mr. Phillips, have with the proceedings of the Nova Scotia Mining Company, I am unable to discover; but, as the projector of the Nova Scotia Mining Company, I felt a desire to know something more of this Mr. George Phillips, of Old Broad-street, who had placed himself in the centre of a considerable circle of intended shareholders, capable of appreciating the richness of the "Nova Scotia ores," and had recourse to a directory to inform me whereabouts the centre of this considerable circle could be found; but, owing to "something mysterious," the directory does not afford the requisite information. But let me inform intending shareholders, beyond the influence of Mr. Phillips's circle, that there is, in Old Broad-street, a "mysterious something," which is the centre of a circle, who do understand the value of the mines of Nova Scotia, and who have displayed a very indiscreet uneasiness, lest others should taste and appreciate the sweets they now enjoy unmolested. I happen to have, among my papers, a Halifax newspaper, containing the proceedings of a public meeting, held in Halifax, Nova Scotia, for the purpose of taking preliminary steps towards the formation of the company now incorporated as the "Nova Scotia Mining Company." The Hon. S. Cunard, who is the principal agent for the General Mining Association in Nova Scotia, appeared at that meeting. I presume that, from his connection with the General Mining Association, he would not be disposed to give an exaggerated description of the value and extent of those mines. May I ask you, with a view to remove from "the circle of intended shareholders," any suspicions that might arise from Mr. Phillips's insinuations, as respects the value of these ores, to publish Mr. Cunard's opinions as they appear in the accompanying *Halifax Times* newspaper, which will greatly oblige—JOHN ROSS: *Aldersgate-street*, May 7.

MR. CUNARD'S OPINION OF THE LONDONDERRY IRON AND COAL DEPOSITS. "Hon. SAMUEL CUNARD said, that as his name had been mentioned, he would state that he had visited these mineral deposits with scientific men, and had no doubt himself but that they were exceedingly valuable. All that they wanted was capital to turn these resources to a profitable account. With regard to the shipping place, it could be seen from the site of the mines. There was a singular combination of coal, iron, and lime there, which was wanted at Annapolis. If he had these mines in his possession, he was satisfied he could do something with them which would be beneficial to himself, and to the country. [In answer to a question from the Hon. Attorney General, Mr. Cunard said, that the ore at Londonderry, was far richer than that at Annapolis.]—The ore was indeed very rich, and the quantity he believed was illimitable. * * * He also stated that, if this valuable deposit of minerals had been reserved in the grants of the Crown, and conveyed to the General Mining Company, they would have had an establishment at Londonderry by this time, worth 100,000l. The hon. gentleman also referred to the saving of the Royalty, which owing to these deposits not being reserved, any company that worked them, would not have to pay."

THE METAL TRADE—THE BANK OF ENGLAND.

SIR,—As if the times were not already bad enough with the proprietors of copper-works, and the poorer proprietors of iron-works, tin-works, chemical-works, and collieries, in this neighbourhood, the directors of the Bank of England have lately come into competition with them, carrying on the works of the Governor and Company of Copper Miners after a fashion. The reckless proceedings of those latter did mischief enough to their neighbours, by their system of giving higher wages, and selling their produce at lower rates than others; but people bore with them, knowing their end was a matter of time only; but it is really too bad to have the Bank of England, with their thousand advantages in the market, as dealers in copper, iron, tin, naphtha, and coal. The object of my letter is to ask some reader to inform me, if the Bank of England Charter gives authority to the directors to become traders as above?—P.: *Neath*, June 6.

OXIDE OF ZINC AS A PIGMENT.

SIR,—There is an unfortunate perversion of reason in human nature, by which, in all cases, where a person puts himself forward with information for the public welfare, although evidently under disinterested circumstances, the most impure motives are attributed to him, and such as probably never in the remotest degree entered his imagination. In my communication to you, published in the *Mining Journal* of 27th ult., on the "Oxide of Zinc as a Pigment," I merely made a statement of facts which are well known to scores of persons in London and Swansea; and yet I am attacked by Mr. Leighton as being a party "interested in lead ores, or the sale of white lead." Now, Sir, I am neither interested in one or the other; nor do I think that, should the pure oxide of zinc be valuable as a pigment to the extent stated by "A." Liverpool, and thus naturally come into extensive use, that it would injuriously affect the production of lead ores, or that it would prevent the manufacturer and merchant, engaged in the production and sale of white lead, from diverting their capital and skill into the new channel thus formed by the introduction of a more economical and preservative pigment. All I have to say, with regard to Mr. Leighton's suspicions, is—I should have expected a little more courtesy from such a quarter. With respect to the purity of the oxide obtained, and the nature of the process, I can only inform Mr. Leighton and "A." that the ore employed was "blende" (sulphuret of zinc). The furnaces employed for calcining the ore, and freeing it from sulphur, as also the condensing chambers for collecting the oxide in powder, were on a new and patented plan—while the reduction of the oxide to metallic zinc was not widely different to the plan at present in use on the continent. At the time of conducting the experiments, the oxide was considered free from sulphur, and the metallic zinc produced pure, and rolled into sheets with facility—many specimens of which, of various thicknesses, I inspected at the time; and the failure, I believe, arose from the too great cost of the coal required, compared with the market price of spelter. H. B.

Swansea, June 6.

CAST-STEEL.

SIR,—The daily triumphs of chemical and mechanical power are fast driving the word "impossible," with respect to anything which does not involve a contradiction, out of our vocabulary; this does not, however, seem to be the creed of "A Steel Manufacturer," who says, in your last, "small articles cannot be cast in steel with any degree of soundness or sharpness; the metal sets immediately on being poured into the mould, and is of so susceptible a nature that it shrinks from contact with anything, and would not receive a fine, or sharp, impression." Would not red-hot moulds produce a greater degree of both soundness and sharpness.

Penzance, June 5.

ALFRED T. J. MARTIN.

REFORM OF THE PATENT LAWS.

SIR,—I see, by the last week's *Mining Journal*, that a correspondent, in writing about the Reform of the Patent Laws, says, that if divested of the fees, the present patent system would be good. I have experienced the evils of the present patent system, but I think that the fees constitute the least objectionable part of it; I also differ from your correspondent in respect to his opinions of the uselessness of the lawyers: I believe that all true men of genius are lovers of justice, and that, while there are any good and true men existing, law will always be useful to society; but, then, on the other hand, justice forms no part of the present system for securing to inventors an interest in their own inventions. There is not the slightest protection against fraud, for an inventor may be surrounded on all sides with snares. It is not right that rich men should have power to take out patents for the inventions of others; I think that Mr. Campin's petition very clearly points out the evils of the present system. A system which shall operate with complete justice in all cases, is, no doubt, very difficult to construct; and, perhaps, such a system could not be proposed by every individual; but I think that the present patent system is a disgrace to any country which professes to be ruled by religion, wisdom, and justice.

London, June 3.

GEORGE PETRIE.

THE PATENT LAWS.

SIR,—That a great reduction in the patent dues might prove a great evil, and render "confusion worse confounded," by engendering a multiplicity of frivolous patent rights, as anticipated by Mr. Martin, I am really afraid would be too true; and it is the continual presence of this idea to my mind, that has induced me to put forward such moderate propositions, for the amendment of the Patent Laws, as I have done, wherein I do not propose cutting down the fees to a mere nothing, but only the payment of the same amount of fees as is now paid, but by instalments; which the exercise of a little arithmetic will show must be fixed at a sum of sufficient amount, to deter persons from taking out letters patent for merely trivial modifications; but should the amount of the fees not be such as sufficiently to deter the frivolous from placing obstructive monopolies in the way of manufacturers and artisans, we have but to require of the learned judges, that they carry out, with due strictness, the law, as laid down in the statute of monopolies, 21 Jac. I., c. 3, s. 6 (that great keystone of the patent system), which declares, that letters patent are not to be accounted valid for anything manifestly to the hurt of trade, or generally inconvenient; or, as Sir Edward Coke (3 Inst., 184) says, that to deserve the patent "privilege, there must be *urgens necessitas et evidens utilitas*;" and, although there has hitherto been great tenderness exercised in the practical adoption of this doctrine, still the law, as it at present stands, seems quite competent to deal with such grievances, should they occur; but should mature deliberation show it to be advisable to have a further safeguard against the occurrence of such abuses, which I very much doubt, I would propose that all applications for patents, stating the *real title* of the invention, be gazetted for a certain period, giving all persons the right of opposing for a small fee, but making the applicant pay full fees if he were nonsuited. This would make applicants careful as to the character of the inventions for which they demand patents, and enable the public to keep guard over the patent list. I may here remark, that the plan of gazetting applications for patents as above is a mere incidental suggestion, and one that I have not considered in all its bearings; and, moreover, I can see that some objections might be urged against it, though I conceive they will, on examination, be found groundless.

After all, should some inconvenience arise from the register of patents being augmented, as regards frivolous inventions, it will be more than compensated for, by the accession of a great number of really-important inventions—for, although it be true, that "one that is good for anything is generally worth the present cost of a patent," and this no one is so ready to admit as the inventor; yet if he be of moderate means, who is to pay the money? Of course, he must apply to the capitalist, allow him to dictate his own terms, and, perhaps, incur the risk of having his invention filched away from him. In fact, the present system, like other portions of our legal system, permits the money-capitalist to ride rough-shod at pleasure over the skill-capitalist; indeed, nothing but the great extent to which probity prevails amongst the commercial classes of this country, keeps these matters so clear as they are from the entanglements of dishonesty; still wrong doing occurs often enough to render this state of things an evil of some magnitude, which it is desirable to remove, and which may be removed by the means I have pointed out; because, by allowing an inventor, after he has paid his first instalment, to take up the title deeds to his property—i. e., letters patent—in negotiating with the capitalist, he is in the position of one who is already in possession of a property—whereas, he now generally stands in the position of a party who has property in prospect, from which he may be ousted by intrigue and chicanery.

I am glad to see, from a communication in your last, signed "A Patentee," who has paid for Experience, that the maintenance of a classified register of patents, and an accessible record office, is regarded by patentees, in its true light, as a point of first-rate importance; for so convinced am I, that this would place patent property on a much surer basis than now, and facilitate business, that I would, did my avocations as a patent agent permit, undertake the task of making the classification, provided the Government would allow access to the *matériel*, without payment of fees. Even as it is, would they do this, I should be happy to assist in the task. As we now stand, although we have lists which are indexed to a certain extent, yet no one could affirm them to be exactly authentic; they are as correct as we can get them—and that is all that can be said of them.

In conclusion, allow me to express my satisfaction at the announcement, that the British Inventors' Protecting Society intends to move forward with spirit; great praise is due to the members of this body. They have already—though newly started—assisted a highly-ingenuous man to battle successfully against the present disgraceful patent system, and secure his rights; and trusting that the day is near at hand, when every man, who exerts himself for the common good, may, by the aid of improved laws, and the exertions of such institutions, not fail of obtaining his reward, I heartily wish them "good speed."

Patent-office, 210, Strand, June 7.

F. W. CAMPIN.

Geology of the Isthmus of Panama.

ACCOMPANIED BY A MAP OF THE TERRITORY FROM THE GULF OF DARIER TO CHIRIQUI.
BY E. HOPKINS, C.E., F.G.S.
(Continued from the Mining Journal, June 2.—Communicated by the Author.)

THE SALINAS OF LOS SANTOS AND NATA.

These salinas are the production of sea water, which, during spring tides, spread over extensive plains; and the salt is obtained by spontaneous evaporation within embankments made for that purpose. In these warm climates the evaporation is very rapid; and by judicious arrangement in the mode in which the sea water is brought to the crystallising pans, a very considerable quantity of salt may be obtained in a short time, and at a small expense.

The salt made by the spontaneous evaporation of sea water, even under the most favourable circumstances, is not as pure as some of the rock salt, or saline springs; however, the salt from these salinas may be made much purer than it is now prepared. The saline contents of the Pacific bordering the isthmus are, on an average, about 3.60 per cent.—viz.:

Chloride of sodium (common salt)	9.56	
Chloride of magnesium	0.36	Deliquescent bitter salts.
Sulphate of magnesia	0.58	
Carbonate of lime and magnesia	0.06	Sparsely soluble salts.
Sulphate of lime	0.04	

According to the chemical character of these salts, the common salt must crystallise after the deposition of the sparingly soluble salts, and before the crystallisation of the deliquescent salts. Hence we have three important stages to be attended to—viz.: 1st. To receive the sea water in large shallow reservoirs, and expose it to the heat of the sun for several days to evaporate, so as to cause a large proportion of the sulphate and carbonate of lime to deposit before supplying the pans.—2d. The pans, between the reservoir and the crystallising pans, should be made broad and shallow, so that the water may be further concentrated before entering the pans; the latter should not be filled above one or two inches deep each time; by this means the salt will soon crystallise, and, if broken and taken up immediately, it will be nearly pure salt.—The 3d stage is the removal of the bitter solution, or deliquescent salt, remaining in the pan after the crystallisation of the common salt. The sulphate of magnesia, having a solubility in water about one-half more than that of common salt, will not begin to crystallise until more than 4ths of the water is evaporated; therefore, the admixture of these bitter salts can be easily avoided by ladling out the remaining liquid immediately after the extraction of the common salt; by this means a very pure salt may be obtained.

The method adopted at present is imperfect. They let in the sea water direct into the canals, and these canals are somewhat narrow and very deep, and not adapted for rapid evaporation, and the deposition of the calcareous matter; the water is let into the pans without its strength being much increased. The salt pans are much too deep—they are filled each time, and the total contents are scraped out into heaps; hence, the cause of the salt being so much mixed with the impurities contained in the sea water. It is true, that the piling of the salt in pyramidal heaps, and leaving it exposed to the air, drains a large proportion of the deliquescent salts, but this is not sufficient.

The accompanying sketches will show the mode now adopted, and also the improved plans suggested. Each salina is attended by two men, with wooden shovels, in the form of scoops. Each pan produces about 2 quintals (200 lbs.) of salt per 30 days. The canals are filled with sea water every 15 days, and the pans every 8 days. There are about 35 salinas at Agua Dulce, and 8 at Los Santos. The smallest contains 45 pans, and the largest 96. If we take the average at 60 pans per salina, the total will amount to 2880 pans—each producing two quintals per month, or ten quintals during the season; hence, we have a total produce, by means of the present system, of 28,800 quintals—that is, supposing their being all in full operation during the season.

By improving the method, so as to effect a more rapid evaporation, and also occupying all the available plains bordering the sea, upwards of 50,000 quintals may be obtained, much purer, and with but a little more than the present cost. The salt is often sold as low as four reales per fanega (2s. per 300 lbs.). By calcining the salt on the banks of the neighbouring rivers, and making it sufficiently compact for inland carriage, it may be introduced into the valley of the Cauca, via Buenaventura, where the salt is at a very high price, and where there is a very great consumption; by this means, these salinas might become of great importance, and a permanent source of wealth to the province.

* Near land and rivers, the proportion of saline matter is smaller than in the open sea; in the same parallel. The saline contents of the sea increase southward.

Latitude, 1° 0' south	8.7 per cent.
" 20 0	3.9 "
" 25 0	4.1 "
" 30 0	4.3 "
" 35 0	4.5 "
" 40 0	4.7 "
" 45 0	4.9 "
" 50 0	5.1 "

There is much greater proportion of lime in the South Sea than in the North—particularly in the Pacific. Although the chemical analysis of the Northern Sea has not shown silica to be one of its essential constituents, yet I have no doubt (from observations made and obtained whilst on the Pacific) that silica and alumina form an important proportion in the Southern Sea. In the antarctic region, the sea is as thickly inhabited by the siliceous-shelled infusoria, as the tropical zone is in the growth of corals. The monthly steamers, running between Chili and Panama, require frequent cleaning, in consequence of the increased contents of the saline matter of the south. The tides of the Pacific are propagated like large waves from the south—much higher along the western coast than in the middle of the Pacific. The configuration of the Isthmus of Panama being nearly at right angle to the direction of the current of the tidal wave, it is dammed up, as it were, and thus causes a rise, varying from 20 to 22 feet, at high-water. At Chagres, on the opposite coast, in the Caribbean Sea, the tide is scarcely perceptible; for the same reason, the mean height of the sea at Panama is a few feet higher than at Chagres. The mean temperature of the sea at Panama is 78°, at Chagres 81°.

NEW METHODS OF SEPARATING NICKEL AND COBALT.

1. METHOD BY H. ROSE (Royal Academy, Berlin, June 14, 1847, *L'Institut*, No. 727).—The mode of separation, proposed by Mr. Rose for these two metals, rests on the fact that, in a solution of oxide of cobalt, which contains free hydrochloric acid, this metal may, by means of chlorine, be wholly transformed into perchloride, while the chloride of nickel suffers no such change in an acid liquid. To employ this means of separation, the two metals are dissolved in a decided excess of hydrochloric acid; the solution is then largely diluted with water, and a current of chlorine gas is passed through it for several hours until the liquid is completely saturated therewith. Carbonate of baryta is then added in excess, and the solution left for 12 or 18 hours in a cool place, and frequently agitated. The peroxide of cobalt, which is precipitated with the excess of carbonate of baryta, is washed with cold water, dissolved in chlorohydric acid, and, after removal of all the baryta by sulphuric acid, the oxide of cobalt is precipitated by solution of potash, and, after washing and drying, is reduced in a platinum or porcelain crucible by means of hydrogen. The filtrate, from which the cobalt has been separated, is of a pure green colour, and is perfectly free from any traces of oxide of cobalt. After separating the excess of baryta from this filtrate, the nickel is thrown down by a solution of potash. This method can be advantageously employed in preparing these two metals in a perfectly pure form.

2. METHOD BY LIEBIG (Extract of a letter from Baron Liebig to Professor Horsford, of Cambridge; communicated for this Journal).—The two oxides are covered with prussic acid, and then potassa is added till both are dissolved. The solution is then kept boiling through a quarter of an hour. At the conclusion of the boiling, moist hydrated oxide of mercury is added to the hot solution till a part remains undissolved. There occurs a green precipitate containing all the nickel, with an excess of undissolved oxide of mercury. By ignition there remains pure oxide of nickel. Acetic acid is added to the filtrate till the reaction is acid, and then thrown down with blue vitriol. The blue precipitate contains all the cobalt. This is dried, ignited, re-dissolved in hydrochloric acid, the copper precipitated by hydrosulphuric acid, and then from the filtrate, the cobalt with potassa. The method depends upon the fact that nickel-cyanide of potassium is decomposed by oxide of mercury, while cobalto-cyanide of potassium experiences no change.—*Silliman's American Journal*.

ON THE SEPARATION OF SILVER.—In a recent communication made to the Paris Academy of Sciences, MM. Malaguti and Durocher show that all the metallic sulphurets and arseniurets, properly so called, decompose a certain quantity of chloride of silver. This decomposition is effected more or less slowly when the contact is made with dry salts; but it is accomplished more rapidly, and in some cases even instantaneously, when the chloride or bromide of silver is in solution:—100 parts sulphurets of zinc decompose 3 chloride of silver.

" "	cadmium	" 14 "
" "	bismuth	" 2 "
" "	lead	" 3 "
" "	proto-sulphur tin	" 14 "
" "	bisulphur tin	" 30 "
" "	proto-sulphur copper	" 360 "
" "	arseniuret antimony	" 120 "
" "	cobalt	" 166 "

All the pure metallic sulphurets possess the property of decomposing, under determinate conditions, a given quantity of chloride of silver, and even other insoluble chlorides. This property appears to be modified, in certain cases, by the molecular state of the substances. The decomposition of the chloride of silver may be effected by double decomposition, by reduction, or by reduction and double decomposition together.

On the Winning and Working of Collieries.

BY MATTHEW DUNN, MINING ENGINEER.
No. VII.—Continued from the Mining Journal of the 2d June.
VARIOUS MODES OF LETTING COLLIERIES.

The principle upon which rent is reserved in the leasing of collieries varies in different districts, according to ancient custom, or some peculiar circumstance; but the basis is founded upon the profit to arise from the fair and proper working, and the extraction of the greatest quantity of coal possible from the mines. In many cases the custom was established under circumstances totally different from those subsequently brought about; but, as I said before, all are more or less intended to bear upon the most effective working of the mine and the selling of the produce. Hence the now universal custom of reserving the rent upon one or other of the following principles:—

1. Rent upon tonnage.
2. Rent upon amount of sales.
3. Rent by acre of coal, 1 ft. thick, and so in proportion.
4. Rent certain—a certain sum per annum, independent of the quantities of coal that may be raised from the property—but this principle of letting is now nearly obsolete, because wanting in equity.

1. THE RENT UPON TONNAGE.—Is prevalent over the north of England, and other parts in which the amount of sales of the coals is difficult to ascertain—one price being allotted to the round coal, and a proportionate rent to that of small passed through a screen of certain defined dimensions. It is rendered a principle next to imperative, in the Newcastle collieries, because in the vending of coals, whether to manufacturers or to the sea, freightage and railway dues are generally adverted to, whereby the coal owner becomes the merchant; hence the actual returns of sales of these coals can only be procured after the lapse of considerable time, and under such devious and complicated accounts, that it would ill suit the landlord to embarrass himself, with the investigations necessary to reduce the rents to a per centage of the amount of sales; hence the general custom of levying the rents per ton of round coal and of small coal. These rates, of course, differ according to the relative advantages of locality, the value of the coal, cost of winning, expense of working, &c.; but they may be stated in this country at for round coal 6d. to 12d., and for small coal 2d. to 4d. per ton; at the same time, a certain annual rent floats over the property, payable on account, until the periodical settlement of the quantities be made. In the provision for rent there is always sufficient time allowed to win and open the colliery, before the commencement of the payments. I will here enumerate the general clauses inserted in colliery leases in this district.—1. Term of years determinable on the part of the tenant at any or at certain periods of the lease, by giving 12 months' notice in writing.—2. Certain rent, payable half-yearly, without regard to the working of coals, or at the option of the landlord, so much per ton (48 tons) for round coal, and so much for small, passed through a screen of certain dimensions; or so much for coals just as they are brought from the mine, but sold, the colliery consumption being thereby allowed rent free.—3. Tenants to be liable to all surface damages (generally double the annual rent), and, at the expiry of the term, to restore or pay for such damaged land, according to the arbitration of disinterested persons.—4. Power to make up shorts, for rent prepaid—that is, by working up quantities of coals at the agreed rate per ton, such privilege to remain either for certain periods, or during the whole term.—5. Lessee to leave certain defined barriers of coal against adjoining properties.—6. Power of working other properties by outstroke underground, paying for the same, according to circumstances, one or more of the following privileges:—

	Per ten of 48 tons.
For breaking the barrier, or underground way-leave	2s. to 3s.
For shaft rent, drawing up the shafts	2s. " 3s.
For way-leave rent over the surface	2s. " 3s.

—7. Landlord reserves all power and privilege of examining the mine, the books, measuring the waggons, or tubs, &c., with power to levy for over measure.—8. All buildings of brick or stone to be left to the landlord at the end of the lease.—9. Landlord to have power to purchase any part of the stock by giving—months' notice previous to the determination of the lease.—10. Lessee covenants to work fairly and orderly, according to the most approved principles of mining; otherwise, in case of misconduct, to be liable to damages, with power for the landlord to re-enter the lease. The same applies to unpaid rents.—11. Lessee allowed to dig clay, quarry stones, &c., for the purposes of the colliery, rent free.—12. Lessee bound to leave the colliery in a fair tenable condition, with proper passages to the whole coal, &c., otherwise liable to damages.—13. General clause for reference, in case of dispute upon any subject arising out of the lease.

2. LEASES UPON AMOUNT OF SALES.—Throughout Scotland, and many other coal districts, it is customary to levy the rent upon a proportion of the amount of the value of coals sold, and this rent varies from 1-5th to 1-15th, according to the value of the coal and the cost of producing it. In some cases, a colliery is re-let which is already won and in course of working, whereas another is to win, at great risk and capital. Such rents, therefore, are generally payable upon the value of the coal at the pit top; so that the expense of delivering them at the depot, or place of shipment, is deducted from the value at such distant place before estimating the rent. This is a very fair principle of proportioning rent; but, where the coals are conveyed to distant markets by the proprietors, and the sale is devious, it becomes difficult to apportion the value.

3. LEASES PER ACRE.—Throughout Lancashire and the neighbouring counties, it is common to let or sell coal by the Cheshire acre, which consists of 10,240 square yards, instead of the statute acre of 4840; the lessee being also bound to a certain rent, equivalent to so many acres per annum, at the agreed price per acre. In this case the tenant is left to work the colliery to the best advantage, in regard to the getting out of all the coal possible, inasmuch as it is assumed to be paid for as totally worked. The price per acre differs according to the ever-varying circumstances of collieries; but, in order to apply the principle to every variety of seam, it is levied at so much per foot thick per acre, the said footage ranging from 40ft. to 140ft. per acre; and, in order to arrive at the proper quantity worked each half-year, the average thicknesses of the seam are taken throughout the workings, and the quantities computed, each year's measurement being differently coloured upon the plan, and the workings balanced and accounted for, along with the certain rents payable on account. However equitable in principle this mode may be, it leaves too much of calculus in the office of surveyor; for many parts of the mine may become inaccessible from one period of measurement to another, and may also be irregular in thickness, on account of bad coals or bands, or other reasonable drawbacks. But, by force of custom, the different seams in neighbourhoods where they are known, assume a sort of current value, which becomes sufficiently satisfactory. This mode of estimating the rent is in favour of the lessee, whose knowledge, experience, and capital, induce him to carry on the most improved system of working, whereby either a larger quantity of coal than ordinary may be produced from the mine, or a greater proportion of larger coal yielded, inasmuch as the rates of rent have been founded upon the average produce, or the general practice in the district. The available produce of ordinary mining may be stated at three-fourths of the gross contents, and of those three-fourths a certain proportion consists of small coal, over and above that which is left underground. If, therefore, by an improved mode of working, these available proportions can be amended, it amounts to a reduction of the ordinary rent. A Cheshire acre of coal, 1 ft. thick, may be said to contain 3000 tons; supposed to be left underground, in pillars and small coal, 800; available, 2200; suppose small at surface and colliery consumption, 600; produce large coal, per foot thick, per Cheshire acre, 1600 tons.

4. LEASES FOR CERTAIN RENT ONLY.—Were common in former times, in which grants from the crown, or of manors, where the existence of coal was uncertain or problematical, or in properties so small or so isolated as to be incapable of competition in the market. The want of the clause for tonnage has been known to invalidate colliery leases in the Court of Chancery.

[To be continued in next week's Mining Journal.]

A NEW MINERAL USEFUL IN ARTS.—We learn that Mr. Blake, of Akron, Ohio (U.S.), has discovered a mineral, in the neighbourhood of the latter place, which promises to be of great value. He has visited Washington, and obtained a patent for it. "When first dug up, it is of the consistence of tallow, and gradually hardens in a few days, so as to resemble slate, and finally it becomes as hard as rock. It is of the colour of indigo, is impervious both to water and fire, and admits of the finest polish. When reduced to powder, and mixed with linseed oil, it has the appearance of black paint, and may be spread over wood, canvas, &c. Roofs have been guarded by it against fire; and as it does not absorb the rain, it protects the rafters from decay. It consists of about one-half of silica, one-fourth of alumina, with less proportions of magnesia, black oxide of iron, sulphate of iron, lime, and carbon."

MINING OPERATIONS IN RHONDDA VALLEY.—This rich and interesting district is daily becoming more and more developed. The Messrs. Hedley and Co., on Saturday evening last, struck an excellent vein of coal, 3 feet 2 inches thick, in their Trosdyrhil pit, 20 yards deep. These gentlemen have a level also opened upon the same vein on Tynnewydd farm, and are prepared to send a large quantity per diem into the market. The Rhondda extensions, it is expected, will be immediately proceeded with by the Taff Vale Railway Company, who have, indeed, already done wonders in rendering conveniences and constructing branch railways for the transit of the minerals of the district to port; and it is to be hoped, that every landowner will offer no futile obstruction to the extensions, by putting extravagant prices on their land, or the directors of the company, be influenced by private interests in the postponement of the same, or either of those evils, by delaying the extensions, will damp the ardour of enterprise in these valleys, and direct its course elsewhere, which all parties interested here should deprecate and try to avert. Messrs. Insole have also commenced working their new balance machine at Cymmer pit, and about 40 tons of the coal (known as Coffin's coking coal), were sent down by rail on the 30th May, being of superior quality and appearance. Messrs. I. are also opening on another vein by level near Dinas. The Ynyahir colliery is also in a way to send 30 or 40 tons per diem down; and there are two other properties of great extent up the valley; one on the coking coal seam, and the other on the smokeless, or steam-boat coal seam, now in treaty for. The enterprising spirit of several capitalists having been for some time directed to this district, it is to be hoped the Taff Vale Railway Company will, by their promptitude in meeting the views of mineral proprietors and freighters, give an additional stimulus thereto.—*Merthyr Guardian*.

JOINT-STOCK COMPANIES.—The total amount of fees paid at the office for the registration of joint-stock companies during the year 1847, appears to have been 41557, including 5482 for the registration of returns, 7692 for the perusal of deeds of settlement and abstracts, 10402 for certificates of provisional registration, 842 for renewed certificates to that effect, 1412 for annual certificates, 4852 for certificates of complete registration, 7482 on capital of companies completely registered, 802 for searches, and 1672 for office copies. The number of companies provisionally registered in 1847, amounted to 215, the number completely registered to 98, and the number provisionally, but not completely registered, to 178. The registration office employs a registrar, Mr. J. Whilmarsh, with a salary of 8002, a deputy registrar, Mr. George Taylor, with one of 3002, and five clerks with salaries of 802. The number of bankruptcies of joint-stock companies which took place in 1847, amounted to four. Three were railway companies, and one a cemetery company. Of three of these associations the debts were not ascertained; of the fourth (the Birmingham and Boston Direct Railway Company), the debts amounted to 50592, 6s. 10d., and the assets to 242, 10s.

THE LANDED PROPRIETORS OF IRELAND.—From the Registrar's Office of the Court of Chancery, and the Chief Remembrancer's Office in the Court of Exchequer, in Ireland, an abstract return has been issued, showing the number of causes, rental of estates, arrears of rent, gross amount of costs paid by receivers, and amount expended in improvements in each county in Ireland during the years 1844, 1845, 1846, 1847, with reference to estates under the management of the said courts. The following statement will illustrate the perplexing position of landed proprietors during the year 1847.—Number of estates under the management of the Court of Chancery during that year, 1840; yearly rent, 687,5242, 6s. 9d.; arrears when the receivers were appointed, 83,0442; arrears when receivers last accounted, 469,1912; gross amount of costs paid by receivers since their appointment, 21,1252; amount expended in improvements during the year, 25552, 2s. 1d. It will thus be seen that the gross amount of costs paid by the receivers during the year, amounted to within 12002, of the whole amount in arrear at the time of their appointment. The number of estates under the management of the Court of Exchequer was 448; yearly rent, 155,4022; arrears when receivers appointed, 61,7792; arrears when receivers last accounted, 171,8392. Gross amount of costs paid in by receivers since their appointment, 38,0572; amount expended in improvement, 02.

FALL OF THE MEIKLEWOOD SUSPENSION BRIDGE.—We regret to say that this handsome and useful structure across the Forth, which was erected 17 years ago by the late Colonel Graham, of Meiklewood, fell into the river on Monday last, in consequence of the dry rot having seized the principal timbers. This bridge was erected on the thrust and tension principle, which is the same as that which sustains the tube lately erected across the Conway, having a span of 400 feet. The span of Meiklewood Bridge was 101 feet; and as a proof of the strength of this principle of structure, the bridge continued to carry heavily loaded carts for months, if not for years, after the dry rot had so pervaded the main timbers, that almost the whole body of the beams were decayed. The main beams were of Memel, of excellent quality, and had not the slightest appearance of taint, or rot, when erected. The disease had partially extended to the eyerights and other parts of the wood work. On the Thursday preceding the fall, five carts heavily loaded with barley passed along the bridge with safety—slight symptoms of the decay were observed on Saturday. The bridge fell when no man was upon it, and when parties sent to inspect it were just approaching. The wreck is now being removed from the bed of the river; but from the excellence of the iron material, and closeness of the fittings, there is great difficulty in getting the structure asunder. The want of communication between the counties of Perth and Stirling, at this point, is seriously felt; and we have no doubt but that measures will speedily be taken for having the bridge, which has so unfortunately fallen, replaced.—*Scottish Railway Gazette*.

THE CALEDONIAN RAILWAY.—The progressive improvement in the returns of this undertaking must have already satisfied the most sceptical as to its remunerative character, as they afford the best grounds for continued and increasing confidence in its future prospects. The weekly revenue has now reached within a fraction of 40002, and that too in circumstances of unprecedented commercial distress, and with the main line to the north still unfinished. Indeed, one of the greater feeders of the line—the Scottish Central—has not yet been enabled to contribute or receive any portion whatever of the through traffic between London and the north of Scotland. There is also the western communication to the north in connection with the Caledonian, which, when completed, will largely augment the traffic. In the present position of the line, therefore, any estimate of its return to the shareholders upon the present revenue would be necessarily very imperfect. At the same time, it is satisfactory to find that the present weekly receipts, taking the average at 40002, would yield a very handsome dividend upon the capital embarked in those portions of the line now in operation. We believe it will be found that, after paying the stipulated rent for the Garnkirk and the Wishaw and Coltness—a trifling less than 50,0002—and allowing 33 per cent. for working expenses, even the present amount of revenue would yield not less than 5 per cent. There is, however, every prospect of the receipts being augmented as the other portions of the line are brought into operation, and the proper connections of the company are combined with the Caledonian system. It is exceedingly gratifying to those who, like ourselves, have always placed confidence in this undertaking, to find these anticipations of its success so signally and rapidly verified by actual results.—*Scottish Railway Gazette*.

LANCASHIRE AND YORKSHIRE AND GREAT NORTHERN RAILWAY.—The opening of the Askern branch of the Wakefield, Pontefract, and Goole Railway, and also of about four miles of the Great Northern, took place on Monday last. The Wakefield and Goole line is a branch from the Lancashire and Yorkshire (late Leeds and Manchester), and the Askern branch forms a junction with the Wakefield and Goole at Knottingly, from whence it proceeds to Askern, a well-known bathing place, about six miles from Doncaster. At the terminus, a little beyond Askern, a junction is formed with a part of the Great Northern, north of Doncaster, which is now completed within a mile and a half of that town, thus forming a direct communication from this point (the first by railway from Doncaster) to Leeds, Manchester, Liverpool, Bradford, Huddersfield, and the north generally. The Wakefield Pontefract, and Goole line was opened about six weeks since, and since then several trains have been running daily from each terminus. The Askern branch is expected to be the main line from London to Leeds, &c., as soon as certain portions of the Great Northern are completed. It commences at Knottingly, a large village famous for its limestone quarries and canal navigation, and proceeds from thence to Womersley, where it passes the seat of Lord Hawke, the lord of the manor, whose fox-hunting zeal is well known for a considerable distance. The line next passes Stapleton Park, the villages of Wentbridge, Stubbs, Walden, and Little Smeaton, and crosses the River Went. It next approaches Norton, Campsall, and Askern. This has for some years been a watering place, and famous for its celebrated mineral springs, which are frequently resorted to for scrofulous, rheumatic, and gouty complaints. Here the line terminates at a place called Redholme Wood, where the Great Northern runs into it, and thus the route is completed to Stockbridge, about a mile and a half from Doncaster, that small distance being expected to be opened in a few weeks. In order to convey passengers northwards, a line is contemplated between Knottingly and Barton-Salmon, a distance of about three miles; an Act for this has already been obtained—and until this line is made, an omnibus will run between those two places. It is expected, however, that ultimately the Great Northern Company will make their line direct from Doncaster, through Askern, Selby, &c., to York, and so make an independent line throughout. The whole of the proceedings passed off without accident.

AMERICAN STEAMERS.—Dr. Scoresby remarked, in a lecture which he delivered in Bradford, on the 25th May, that the recklessness and during of the Americans were remarkable, and might be well illustrated by the value which appeared to be set upon life in their steamers. British steamers sailed across the Atlantic at a pressure of steam from 5 lbs. to 7 lbs. on the square inch. The American Atlantic steamers professed to work at a pressure of 20 lbs. on the square inch, and the North River steamers at 16 lbs. to 20 lbs., and sometimes 30 lbs., on the square inch, while, on the Mississippi, a pressure of 80 lbs., 100 lbs., and 120 lbs., and even higher, was had recourse to—it was, consequently, very easy to account for those tremendous explosions so frequently occurring on those rivers. Dr. Scoresby mentioned several of these explosions as cases in point—showing that the passengers were equally to blame with the captains of the steam-boats.

MINING AND GENERAL MUTUAL LIFE ASSURANCE SOCIETY.

Registered Provisionally, under the Act of Parliament, 7 and 8 Vic., c. 110.
Temporary guarantee fund, £100,000.
In 5000 shares, of £20 each.—Deposit £2 per share.—In pursuance of the Registration Act, 2s. per share only will be payable on taking up the shares.
One-tenth of the entire profits of this association is to be applied to form a fund, for securing annuities to aged members and their widows and orphans—to the relief of deserving and distressed miners—and towards founding and supporting charitable institutions in connection with mining interests.

PRELIMINARY PROSPECTUS.

As the knowledge of the principle of life insurance has been more and more diffused, and the manifold advantages of the system appreciated, the number of assurance offices has been constantly and rapidly on the increase. Nevertheless, the persons who have hitherto availed themselves of the benefits of this system, are comparatively few in number. Of the 30,000,000 of inhabitants of Great Britain, not more than 120,000 persons have taken out policies on their lives in all ages; so that it may not be too much to say, that the system of life insurance has scarcely passed the first stage of development.

This fact alone is sufficient to demonstrate the ample room existing for the further extension of the system; while the flourishing condition generally of the assurance offices already established, not only proves the soundness of the principles on which they are founded, but affords a guarantee for the like success of additional establishments, having the same objects in view, and conducted with equal prudence and ability.

As life insurance has been thus extended, various sections of the community have been induced to form their own establishments, so that all professions, and several industrial as well as religious classes, have now each their own assurance office—adapted to the peculiar circumstances of those portions of society with which they are respectively connected, and mainly dependent on them for support.

It is, however, remarkable, that while in the metropolis alone the life assurance companies of all classes and descriptions exceed 100 in number, with engagements computed at upwards of £115,000,000 sterling, those companies do not comprise one emanating from or connected with the mining interests, which are those of a class that has done more than any other to develop the resources and promote the extension of the commerce of the country. So long, then, as this important and influential section of the community possesses no assurance association, especially identified with its interests, it is manifest that a large void in the system of life insurance remains to be filled up.

The various individuals directly connected with mining operations in this kingdom, are far more numerous than the members of the clerical, medical, and legal professions, which have established among them no less than nine different assurance companies. The persons directly employed in the mining operations of this country are about 243,311 in number; the annual value of the miners' productions is £37,622,000; and it is calculated that the mine proprietors, agents, and those connected immediately or indirectly with mining interests, represent an amount of population, and of fixed property, exceeding those of nearly all the other classes of the kingdom having representative assurance institutions. This wealthy and powerful class, undoubtedly, requires the formation of an establishment bearing its own name, conducted principally by well-known members of its own body, and especially adapted for the extension of the advantages of life insurance among the numerous individuals of which it is composed.

For this purpose, the MINING AND GENERAL MUTUAL LIFE ASSURANCE SOCIETY is proposed to be established. Its formation is also called for in consequence of the working miners being either excluded from existing offices, or subjected by them to a considerably higher scale of charges in the annual premiums than experience has shown to be necessary. The mining interests possess more than ordinary power and influence to promote all the objects which such an institution is calculated to effect; and, in submitting the present scheme to the public, it has been considered to leave the society upon principles which cannot fail to command its countenance and support.

1. By the formation of a fund, to the extent of 1-10th of the profits of the association, to be called the "Miners' Widows and Orphans' Fund," for securing annuities for old age to members insured for the whole term of life, and for constituting a perpetual and increasing provision for deserving and distressed miners and their widows and children, and towards founding and supporting charitable institutions in connection with mining interests.

2. By affording inducements and facilities to working miners to make a provision against the infirmities of old age, sickness, or incapacity for labour, and by assuring small sums at death, on a self-supporting and safe system, free from the objections usually urged against sick societies and mine clubs.

THE CONSTITUTION OF THE SOCIETY.

1. The society to be established on the principle of mutual insurance, as being the most economical, and the best and most legitimate mode of individual protection.

2. The interests of the assured to be at the outset protected by a temporary guarantee fund of £100,000, divided into 5000 shares, of £20 each, deposit £2 per share. The experience of well-established offices justifies the expectation that not more than £2 per share will be required to be paid up. On the capital advanced, the shareholders to receive interest at the rate of 5 per cent. per annum, and the capital to be paid off when the shareholders' proportion of the net profits amounts to a sum equal to that originally advanced, and £100 per cent. by way of bonus.

3. The affairs of the society to be investigated, and the profits ascertained and apportioned at the end of every five years; and, after such a sum shall have been reserved as shall be deemed amply sufficient to meet all contingencies, and to enter into the average of succeeding years, the profits to be divided as follows:—

Four-fifths of the profits to be apportioned among the members assured for the whole term of life, on the principle of the members of the various mutual life insurance and industrial classes in the establishment of the "Mining and General Mutual Life Assurance Society," will open an extensive field for operation, and prove advantageous to the mining interests.

THE BUSINESS OF THE SOCIETY.

1. Assurances on single lives, on joint lives, and on survivorships.

2. Assurances on the lives of persons about to proceed to, or reside in, foreign climates.

3. Tables framed for non-participating policies on a lower scale of premiums.

4. Tables on original data, computed for the express purpose of enabling miners and others to insure against sickness or old age, as well as to secure a provision for their families at death.

5. Immediate annuities to be granted, and deferred annuities to be secured, to commence at any specified age.

6. Reversionary and survivorship annuities to be granted.

7. Tables to be constructed, to enable the operative miner to secure a deferred annuity of £10 and upwards for old age, and an annuity payable to his widow and children after his death.

8. Educational and other endowments for children to be granted.

This is the only office identified with the interests of miners, and if they avail themselves of their own institution for the purpose of securing the vast amount of insurances which they may effect or influence, it is obvious that its success must speedily equal that of any assurance company in the kingdom.

In order that the objects of the society may be more successfully carried out, the board of directors will be principally composed of gentlemen connected with mining and the manufacture of metals; and it is believed that the efforts of the members of this numerous and influential class in the establishment of the "Mining and General Mutual Life Assurance Society," will open an extensive field for operation, and prove advantageous to the mining interests.

It is considered that the shares of this society will be regarded as offering a desirable investment to a limited amount, abstracted from all inducements to speculation; and the promoters look to the circulation of this prospectus through private channels for securing that support which they have been in various quarters encouraged to expect. In the allotment of the shares, preference will be given to applicants connected with mining interests, and a due proportion will be reserved for medical men and mine agents supporting the interests of the company.

On the deposit of £2 per share, 2s. only will be required to be paid on taking up the shares, and the remainder upon the execution of the Deed of Settlement.

Application for shares, in the form annexed, addressed to the provisional directors, may be forwarded to—

Messrs. Watson and Cuel, mine share agents, St. Michael's-alley, Cornhill.

Mr. Jan e Lane, mine share agent, 75, Old Broad-street, City, London.

Mr. Henry Elbery, Truro.

Mr. W. C. Hennah, Liskeard.

Mr. W. E. Cummins, Tavistock.

Mr. Hugh Ebrington Croker, Plymouth; or to the Office of the Mining Journal, 26, Fleet-street, London.

FORM OF APPLICATION FOR SHARES.

To the Provisional Directors of the Mining and General Mutual Life Assurance Society.

GENTLEMEN, Please to allot me shares, of £20 each, in the above society; and I hereby undertake—provided that I approve of the board of directors when formed—to accept the same, or such less number as may be allotted to me, and to pay the deposit thereon, and to execute the Deed of Settlement, and all other necessary documents, when required.

Dated this day of 1849.

Name in full

Profession or business

Address

PROFESSIONAL LIFE ASSURANCE COMPANY.

Connecting the Clerical, Legal, Military, Naval, and Medical professions, and holding out advantages to the public not hitherto offered by any similar institution.

Incorporated.—Capital £250,000.

Established upon the mixed, mutual, and proprietary principle.

Rates essentially moderate.—Every description of policy granted. Immediate, survivorship, and deferred annuities; and endowments to widows, children, and others.—Every policy (except only in cases of personation) indisputable.—The assured permitted to go to and reside in Canada, Nova Scotia, New Brunswick, Australasia, Madeira, Cago de Good Hope, and Prince Edward's Island, without additional premium.—Medical men remunerated for their reports.—Loans granted on real or personal security.—One-tenth of the entire profits appropriated for the relief of the assured while living, and of his widow and orphans.—Annuities granted in the event of blindness, insanity, paralysis, accidents, and any other bodily or mental affliction, disabling the parties.—Persons of every class and degree admitted to all the advantages of the corporation.—Rates for securing £100 at the age of 25, 35, 45, and 55, respectively—namely, £1 14s. 6d., £2 5s. 6d., £3 4s. 6d., and £4 18s. 6d.

Prospectuses, with full details, may be had at the office.—Applications requested from persons desirous of becoming agents.

EDWARD BATLIS, Actuary and Secretary.

Office, 75, Cheap-side, London.

PATENT IMPROVEMENTS IN CHRONOMETERS.

WATCHES, AND CLOCKS.—E. J. DENT, 23, Strand, and 33, Cockspur-street, watch and clock maker, by APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1838, 1840, 1842, &c. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from 10s. to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each. DENT'S PATENT DIFFERENTIAL, or meridian instrument, is now ready for delivery. Instructions containing a description and directions for its use, is each, but to customers gratis.

EASTERN ARCHPELAGO COMPANY.—Incorporated by ROYAL CHARTER.

Capital £200,000, in 2000 shares, of £100 each.
CHAIRMAN.—JOHN MACGREGOR, Esq., M.P.
BANKERS.—Messrs. Glyn and Co.

The objects of this company are to carry on MINING, AGRICULTURAL and TRADING OPERATIONS in the EASTERN ARCHPELAGO, and the ACQUIRING and DISPOSING of lands in the island of LABUAN, and the parts adjacent (BORNEO)—a region abounding in mineral wealth—most fertile in all the valuable tropical productions, and very happily situated for the purposes of commerce. The working of the coal mines in those districts, so highly important to the promotion and extension of efficient and economical steam communication with our eastern possessions, will form a main feature in this company's operations.

By virtue of the company's charter, each shareholder's responsibility is limited to the amount of his subscription; and the capital may be increased to £400,000, and further increased with the consent of the Board of Trade.

A detailed prospectus, with a form of application for shares, and an inspection of a copy of the charter, may be obtained at Messrs. GLEDSTANES & CO.'s, 3, White Lion-court, Cornhill.

EASTERN ARCHPELAGO COMPANY.—APPLICATIONS FOR SHARES CAN BE RECEIVED TILL TUESDAY, the 13th June only, when the shares will be allotted.

3, White Lion-court, Cornhill, May 31, 1849. W. WOOLLEY, Secretary pro tem.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th; and from Suez on or about the 10th of every month.

For rates of passage-money, plans of the steamers, and to secure passages, apply at the company's offices, No. 122, Leadenhall-street, London.

NOTICE TO SHIPPERS OF GOODS AND PARCELS

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY'S STEAMERS TO INDIA AND CHINA.—GOODS and PARCELS, sent direct to the company's Parcel-office, at or before 6 P.M. on the 17th of each month, are FORWARDED at least cost to the shipper than when sent through any intermediate channel. Cases must not exceed 112 lbs. weight each for Aden, Ceylon, Madras, Calcutta, and China; and 40 lbs. each case for Bombay. No package for India and China can, under any circumstances, be shipped at Southampton, unless it be cleared through the Custom-house, and placed alongside the steamer by noon on the 19th of each month. Detailed particulars can be obtained on personal application or by writing.—Parcel Department, 122, Leadenhall-street, May 19, 1849.

CALEDONIAN RAILWAY COMPANY.—LOANS ON DEBENTURES.—TENDERS OF LOANS ON DEBENTURE BONDS are now RECEIVED in sums of not less than £500, for any number of years not exceeding five years, to be at the rate of 5 per cent. per annum, payable half-yearly, in London, Edinburgh, Glasgow, or in any country bank.

Tenders to be addressed to this office, giving full name and address of lender.—Parties may also communicate with Messrs. Foster and Brathwaite, 68, Old Broad-street, London. D. RANKINE, Treasurer.

Caledonian Railway Office, Edinburgh, Feb. 23, 1849.

LONDONDERRY MINING COMPANY OF NOVA SCOTIA.—Capital, £80,000, in 2000 shares, of £40 each.

It is provided that 21 days' Notice be given of each call, and that no call exceed 20 per cent., and that successive calls be not made at less than six months, and that the aggregate amount of calls, made in any one year, do not exceed 40 per cent.

Incorporated by Act of the Provincial Parliament.

The following directors have been named in the Act (together with other persons) as constituting the corporation; and they are to continue in office until superseded, or confirmed, by a vote of the London shareholders—viz.:

The Hon. W. A. BLACK, } Members of the Legislative Council.
The Hon. J. E. FAIRBANKS, }
The Hon. A. L. KEITH, }
J. W. JOHNSTON, Esq., Advocate-General.

This company has been formed for the purpose of WORKING a MINE, recently discovered, of IRON ORE of superior quality and richness, situated in the province of Nova Scotia, about 70 miles from Halifax, and about seven miles from a good shipping port, in the Bay of Fundy.

This extraordinary deposit of specular iron ore has been surveyed by Dr. Gesner and J. W. Dawson, Esq., provincial geologists. Extracts from their reports are appended to the prospectus, and other unquestionable references.

"To John Ross, Esq., of Truro, Nova Scotia.
"I have the honor to inform you, in reply to your request, to express the high opinion I entertain of the talents, acquirements, sagacity, and high qualifications of Mr. J. W. Dawson, of Pictou, as a mineral surveyor and geologist, of which I had an opportunity of judging during an examination, which we made together, of several parts of Nova Scotia, and among others, the district of the Valley river—to the valuable ores of which you are now directing public attention."

I may further add, that Mr. Dawson's name is now well-known to the Geological Society of London by several Memoirs on the Geology of Nova Scotia, accompanied by maps and sections, published in their Proceedings and Quarterly Journal.

"I have the honor to be, dear Sir, yours, &c."
"H. Harley-street, May 9, 1849." (Signed) "CHARLES LYELL.
Application for shares will be received by Mr. Charles Walton, of the firm of Charles Walton and Sons, Newman's-court, 73, Cannon-street, London, until the 20th inst.

One-third of the capital stock of the company is reserved for the colonial shareholders—the remaining 1333 shares are offered to capitalists in London, until the 20th inst.

Printed forms of application may be obtained with the prospectus, where the Act may be seen.—Prospectuses may be obtained, and specimens of the ore seen, by applying to Messrs. Royton and Brown, 40, Old Broad-street; Messrs. Charles Watson and Sons, 73, Cornhill; or on application to Mr. Henry English, 25, Fleet-street.—Prospectuses can also be had at the office of the Mining Journal, 26, Fleet-street, London.

Price 10s. 6d., large 8vo., in cloth.

ON THE CONNEXION OF GEOLOGY WITH TERRESTRIAL MAGNETISM.

SHOWING THE GENERAL POLARITY OF MATTER, THE MERIDIONAL STRUCTURE OF THE EARTH, THE CAUSE OF THE TERRESTRIAL MAGNETIC CURRENTS, THEIR TRANSITIONS, MOVEMENTS, AND DISLOCATIONS.

INCLUDING THE SEDIMENTARY ROCKS, THE LAWS REGULATING THE DISTRIBUTION OF METALLIFEROUS DEPOSITS, AND OTHER MAGNETIC PHENOMENA.

By EVAN HOPKINS, C.E., F.G.S., With Twenty-four Plates.

London: Richard and John Edward Taylor, Red Lion-court, Fleet-street; to be had also at the Mining Journal Office, 26, Fleet-street.

"The book contains very valuable information, somewhat closely connected with topics of great interest to this country," &c.—Sir C. Lemon, Bart., M.P., in his Address to the Royal Geological Society of Cornwall.

"The igneous theory has, for some time, been slowly yielding to other views. All the phenomena attributed to fire may be produced by electro-magnetic currents. In this way may be explained the formation of veins, that have long puzzled the geologist. This places geology and magnetism in quite a new light—discussing a field of labour that promises a brilliant harvest to the persevering investigator."—Chamber's Jour.

RAILWAY AND OTHER IMPORTANT RECORDS, EFFECTUALLY PROTECTED FROM DAMP AND VERMIN.

Extract from the Appendix to the Second Report of the Commissioners on the Fine Arts.

"In 1839, I superintended the construction of a house, of three stories, on the Lac d'Engelheim. The foundation of the building consisted in water, about 194 feet below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of SEYSSEL ASPHALTE."

less than half an inch thick, over which coarse sand was spread. Since the above date, no trace of damp has shown itself round the walls of the lower story, which are, for the most part, painted in oil, of a grey stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted. Yet the pavement of the floor, resting on the soil itself, is only about 2½ inches above the external surface of the soil, and only 194, at the utmost, above that of the sheet of water. The layer of asphalt having been broken and removed, for the purpose of inserting the sills of two doors, spots, indicating the presence of damp, have been since remarked at the base of the door-posts.

The DIRECTORS of the SEYSSEL ASPHALTE COMPANY have much pleasure in recommending to the notice of ENGINEERS and ARCHITECTS the application of the ASPHALTE of SEYSSEL, as the only effectual mode of preventing damp in basement floors, and water from percolating through the ARCHES of a VIADUCT.

The arrangements of this company enable works of any extent to be executed with the greatest promptitude.

SEYSSEL ASPHALTE DEPOT, STANGATE, LONDON.

* This method has been adopted at the New Houses of Parliament.

NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY, 26, CORNHILL, LONDON.

Capital £500,000.—Empowered by Act of Parliament.

This institution embraces important and substantial advantages with respect to Life Assurances and Deferred Annuities. The assured has, on all occasions, the power to borrow, without expense or forfeiture of the policy, two-thirds of the premiums paid (see table); also the option of selecting benefits, and the conversion of his interests to meet other conveniences or necessity.

Assurances for terms of years are granted on the lowest possible rates.

DIVISION OF PROFITS.

The remarkable success and increasing prosperity of the society has enabled the directors, at the last annual investigation, to declare a fourth bonus, varying from 35 to 85 per cent. on the premiums paid on each policy effected on the profit scale.

EXAMPLES.

Age.	Sum.	Prém.	Year.	Bonus added.	Bonus in Cash.	Permanent reduction of Premium.	Assured may Borrow.
1837	£217 15 1	£109 0 11	1838	198 3 0	87 1 4	13 10 2	398 11 1
1839	165 11 10	74 1 9	1840	115 7 6	54 10 0	7 18 10	296 13 4
1841	111 0 8	49 10 0				7 10 4	247 4 8

The division of profits is annual, and the next will be made in December of the present year.

F. FERGUSON CAMERON, Secretary.

ADCOCK'S PATENT SPRAY PUMP.—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION, the PATENTEE is ready to RECEIVE, and to execute, ORDERS.—Apply to Henry Adcock, C.E., at his office, No. 2, Moorgate-street, London, where pamphlets, descriptive of the invention, may be had; at the office of the Mining Journal, 26, Fleet-street; and through any respectable bookseller—price 6d.

PATENT GALVANISED IRON AND WIRE ROPE WORKS, MILLWALL, POPLAR.

ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD of GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary process. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.

W. BROTHERTON AND CO.'S PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and finest pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers. Further particulars can be had, and testimonials seen, by application to the inventors, W. BROTHERTON & CO., Hungerford Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

PATENT FLEXIBLE INDIA-RUBBER PIPES AND TUBING, for Railway Companies, Brewers, Distillers, Fire-Engines, Gas Companies, Gardening and Agricultural purposes, &c.

THE PATENT VULCANISED INDIA-RUBBER ROSE-PIPES are made to stand hot liquor and acids, without injury—do not become hard or stiff in any temperature (but are always perfectly flexible); and as they require no ATTACHMENT of oil or dressing, are particularly well adapted for Fire Engines, Pumps, Gas, Beer-Engines, Gardens, and all purposes where a perfectly Flexible Pipe is required.

Made all sizes, from 1-inch bore upwards, and of any length to order.

Vulcanised India Rubber Garden Hose, fitted with brass-taps, Copper branch and Ropes complete, ready to be attached to pumps, water-butts, or cisterns.

Sole manufacturer, JAMES LYNE HANCOCK, Goswell Mews, Goswell-road, London.

N.B.—Vulcanised India-Rubber Washers, of all sizes, for joints of hot-water and steam-pipes, and Vulcanised Sheet Rubber, any thickness, for all kinds of joints, and other purposes.

BRITISH AND FOREIGN PATENT NAIL COMPANY.

Established for the MANUFACTURE of every DESCRIPTION of NAILS necessary for house-building, shipbuilding, and coach-building, together with PINS, SPIRES, BOLTS, &c.—The object of this company is to carry out inventions in machinery, which have been fully tested, and found capable of producing NAILS of a quality equal to the best hammered nails, which can be sold by the company at a less price than the common cut nail. Specimens of the nails, and an estimate upon the working of the company's machinery—showing a dividend of 40 per cent. to the shareholders—may be examined at the offices of the company.

The shares of the company are £3 each, subject to the Parliamentary deposit of 6d. per share.—The calls will not, at any time, exceed 10s., and no call, after the first, will be made without two months' previous notice.

Applications for shares will, for a limited time, be received by the secretary, until the DEED of SETTLEMENT, which now LIES at the office FOR SIGNATURE, is filed up.

By order of the directors, T. PEPPER, Secretary.

Offices, 28, Surrey-street, Strand, London.

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